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PROCESSES OF CHANGE IN RESIDENTIAL AREAS IN TRANSITION

by



LAWRENCE DOUGLAS McCANN

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES

PROCESSES OF CHANGE IN RESIDENTIAL AREAS IN TRANSITION

by



LAWRENCE DOUGLAS McCANN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
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ABSTRACT

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES

Some of these areas are the scene of intensive apartment redevelopment, while in others, single-family houses are being converted to multi-family residences. Such change is concentrated mainly in older neighbourhoods near the central business district, and has taken place largely as the result of demands for rental accommodation. The undersigned certify that they have read, and

recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled Processes of Change in Residential Areas in Transition submitted by Lawrence Douglas McCann in partial fulfilment of the requirements for the degree of Master of Arts.

ABSTRACT

Many residential districts of the city are in a state of transition. Some of these areas are the scene of intensive apartment redevelopment, while in others, single-family houses are being converted to multiple-family residences. Such change is concentrated mainly in older neighbourhoods near the central business district, and has taken place largely as the result of demands for rental accommodation from segments of the population who cannot afford, or do not desire, to become homeowners. As a consequence of these demands and their interaction with other factors, the existing residential structure of many parts of the city is undergoing rapid change.

Seven residential areas in transition are examined in this thesis to determine what happens when the three major components of residential areas—functional patterns, structural stock and population characteristics—are altered as the result of dwelling conversion and apartment redevelopment. It is shown that transition areas undergo a succession of changes which are recurrent through space and time in different parts of the city. As a result of the findings of this study, a descriptive model of residential change, consisting of the causes, location and sequential development of transition areas, is suggested.

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The data used in this study was made available through the kind permission of Mr. G. Hughes, City Assessor. He and his staff, including Messrs. A. Cooper, S. Harnan, P. Stecyk, C. Zeiner and A. D. Lynch-Staunton, readily gave their assistance during the stage of data collection in the summer of 1968. I am also grateful to the many interviewed residents, apartment developers

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census information, which includes age, sex and household characteristics, reveals significant population changes which have accompanied conversion and redevelopment activities.

3) Questionnaire Survey. Because the initial research design of this study was largely exploratory, at the onset of data collection it was felt necessary to obtain the views of transition area residents on such subjects as residential mobility, housing and locational preferences, perception of change and other related variables. In order to obtain this data, a questionnaire was devised (see Appendix B), pretested in several transition areas other than the study areas, revised, and then distributed to each single-family and converted dwelling household unit and randomly to every fifth apartment suite.²¹ Mailed responses totalled 348 from 941 questionnaires distributed for a response total of 37 per cent. This information, too, was coded and processed by computer.

It became apparent, however, when assessing the results of these data that only a limited amount actually pertained to the central problem and objective of this study; that is, to an examination of processes of change. As a result, only a small portion of the actual results are reported in this thesis. Nevertheless, by personally delivering these questionnaires, speaking to some residents and asking each respondent for written comments on the nature of the change which was occurring in his neighbourhood, valuable information other-

²¹ In this study, an apartment building was considered to be a structure built initially to house five or more self-contained dwelling units.

wise impossible to obtain was collected. For example, views were obtained from people on why they converted their houses or how apartment development affected their lives and neighbourhoods. Such information led to a greater understanding of the problem as a whole, and is incorporated throughout this study.

4) Field Work. Field investigation included the mapping of present land use and housing conditions, and interviewing residents, apartment developers, mortgage company officials and City of Edmonton planning personnel. Present land use mapping involved the checking of the land use classification employed by the Assessors Department and checking property boundaries. Because the Assessors Department does not record the present condition of buildings, a windshield survey was undertaken to determine the housing conditions which exist in transition areas. As mentioned previously, residents were interviewed, as were several apartment developers. Ideally, more developers should have been spoken to in order to obtain a wider cross-section of their views regarding the city-wide location of apartments and the actual process of site selection for apartment redevelopment. Planning officials rendered useful information on zoning principles, while several officials of mortgage companies willingly discussed the relation of the money market to apartment construction.

The Study Period

The study period for analyzing change was largely determined by the availability of assessment information. The Assessors Department, although

listing all basic property information (for example date of house construction), has records of land use, assessment, ownership and other property changes dating only since 1953. Hence, 1953 forms the base year for the examination of functional and structural processes of change. All the significant changes are captured, however, because apartment redevelopment did not occur until the late 1950s in some areas, and not until the middle 1960s in the others. This period also coincides with the rapid postwar changes in the residential structure of not only Edmonton, but most other Canadian and American cities. The study period has been broken down into three five-year phases (1953-1958, 1958-1963 and 1963-1968), thus enabling detailed examination of the emergence of temporal and spatial patterns of change.²² Changes that occurred prior to 1953 are also noted when the information regarding them is available, although little change actually occurred prior to this date.

PRESENTATION OF THESIS

This thesis is divided into four main parts. The first, comprising Chapter 1, analyzes some of the reasons for residential change and the resulting formation of transition areas characterized by dwelling conversion and apartment redevelopment. The second part comprises Chapter 2, and discusses the location

²²Because of the rapid fluctuations in the array of factors which produce change, a fifteen year period is considered a suitable time span for examining change. This is concurred in: D. J. Bogue, ed., Needed Urban and Metropolitan Research, Scripps Foundation Series in Population Distribution, No. 7, Oxford, Ohio, Miami University, 1953, p. 23.

of transition areas both in relation to existing theories of urban growth and structure and to empirical field observations. Chapters 3 through 6 make up the third and most important section. Successive chapters analyze functional, structural and population processes of change. Chapter 3 examines functional change as measured by the rates and amounts of change of different residential land use types and by land use succession. Conversion activity is the subject matter of Chapter 4, while apartment redevelopment is discussed in Chapter 5. Population changes which have accompanied functional and structural change are analyzed in Chapter 6. The final part of the thesis, consisting of Chapter 7, offers a descriptive model of residential change consisting of the causes, location and sequential development of a residential transition area.

Chapter I

CAUSES OF RESIDENTIAL CHANGE AND THE FORMATION OF TRANSITION AREAS

INTRODUCTION

Even though there are many varied and interrelated factors capable of reshaping the character of residential areas, to date, the detailed examination of these factors has been neglected. As a result, the knowledge of the reasons leading to residential change and the formation of transition areas, characterized by dwelling conversion and apartment redevelopment, is limited. Only summary discussions of the changing residential pattern of the city can be found in the literature.

Geographers, for example, have contributed generalized studies describing the major forces, such as the trend towards suburbanization, which are shaping the form of the city,¹ but they have given few studies specifically discussing the factors that are causing changes in the city's existing residential

¹See for example: R. E. Dickinson, City, Region and Regionalism, London, Routledge and Kegan Paul, 1947, pp. 93-120; and H. M. Mayer, "Spatial Change Inside the American City," Problems and Trends in American Geography, ed. S. B. Cohen, New York, Basic Books, 1967, pp. 47-63. For examples of studies by other social scientists which describe the forces that are shaping the metropolis see: B. Chinitz, ed., City and Suburb: The Economics of Metropolitan Growth, Englewood Cliffs, N. J., Prentice-Hall, 1964, 181 pp.; and E. M. Hoover, "The Evolving Form and Organization of the Metropolis," Issues in Urban Economics, eds. H. S. Perloff and L. Wingo, Jr., Baltimore, The John Hopkins Press, 1968, pp. 237-284.

structure.² Urban ecologists, economists and planners, though, have examined some of the reasons why neighbourhoods change in character. By using expressions such as invasion and succession, ecologists have formulated theories on processes of social change in the city.³ Similarly, the terms blight, obsolescence, filtering and market imperfections have been employed by economists and planners to describe changes in the condition of urban housing.⁴ However, when searching for the actual reasons which account for the structural redevelopment and transitional nature of residential areas, only generalizations prevail.

Two studies with more specific relevance, however, for understanding the causative factors of transitional areas include the findings reported

²Two examples, however, include: L. S. Bourne, "Market, Location and Site Selection in Apartment Construction," The Canadian Geographer, vol. 12 (Winter 1969), pp. 211-226; and L. L. Pownall, "Low Value Housing in Two New Zealand Cities," Annals, Association of American Geographers, vol. 50 (December 1960), pp. 439-460.

³Amongst the many articles which describe these processes, see for example: E. W. Burgess, "The Growth of the City: An Introduction to a Research Project," The City, eds. R. E. Park et al., Chicago, University of Chicago Press, 1925, pp. 46-62; M. R. Davie, "The Pattern of Urban Growth," Studies in Human Ecology, ed. G. A. Theodorson, New York, Harper and Row, 1961, pp. 77-92; G. C. Myers, Processes of Change in Urban Population Structure, Unpublished Ph.D. dissertation, University of Washington, Seattle, 1963, 244 pp.; and C. F. Schmid, "Generalizations Concerning the Ecology of the American City," American Sociological Review, vol. 15 (April 1950), pp. 264-281.

⁴See for example: I. S. Lowry, "Filtering and Housing Standards," Land Economics, vol. 36 (November 1960), pp. 362-370; R. F. Muth, "Urban Residential Land and Housing Markets," Issues in Urban Economics, op. cit., pp. 305-312; and W. F. Smith, Filtering and Neighbourhood Change, Research Report No. 24, Centre for Real Estate and Urban Economics, University of California, 1964, 77 pp.

by Bourne⁵ and Griffin and Preston.⁶ Discussing the redevelopment process, Bourne cites three major factors which cause change in the patterning of the city. These are: the effects of urban growth itself, the expanded range of locational and social choice, and the aging and obsolescence of the physical plant.⁷ As will be shown, these are basic factors causing residential change and the formation of transition areas.

Griffin and Preston, who have done much to popularize the concept of a transition zone of mixed land uses surrounding the central business district of most North American cities, list a variety of conditions which they feel caused the formation of this zone. The factors mentioned—speculation, technological improvements, decentralization of activities and unfavourable attitudes towards downtown—act negatively to hinder new development in this area of transition.⁸ It should be added, though, that these very factors work in a positive manner to encourage redevelopment and the formation of residential transition areas. For example, attitudes which now favour central city residence are creating a demand for apartment accommodation near the core of

⁵L. S. Bourne, Private Redevelopment of the Central City, Research Paper No. 112, Department of Geography, University of Chicago, 1967, 199 pp.

⁶D. W. Griffin and R. E. Preston, "A Restatement of the Transition Zone Concept," Annals, Association of American Geographers, vol. 56 (June 1966), pp. 339-350.

⁷Bourne, Private Redevelopment, op. cit., pp. 1-3.

⁸Griffin and Preston, op. cit., pp. 341-343.

the city.⁹ As well, the very size of the urban area now favours the centralization of some residences to overcome "costs of friction."¹⁰

To serve as a background for subsequent discussions of processes of change, this chapter examines the extent to which various factors interact to cause residential change and the formation of transition areas. Emphasis is placed on those factors, cited in the literature, which influence the apartment redevelopment that is characteristic of many transition areas. Conditions of the housing stock and social, economic, political and technological factors are examined.

SOCIAL CONDITIONS

The development of residential areas in any city occurs as the result of housing demands from an expanding population. Until recently, these requirements have been met mainly by the construction of single-family dwellings on undeveloped land at the margin of the built-up city.¹¹ It is now apparent,

⁹This trend is discussed in: W. H. Whyte, ed., *The Exploding Metropolis*, New York, Doubleday, 1958, pp. 1-32; and C. Rapkin and W. G. Grigsby, *Residential Renewal in the Urban Core*, Philadelphia, University of Pennsylvania Press, 1960, pp. 30-89.

¹⁰For a discussion of "costs of friction" see: R. U. Ratcliff, "The Dynamics of Efficiency in the Locational Distribution of Urban Activities," *Readings in Urban Geography*, eds. H. M. Mayer and C. F. Kohn, Chicago, University of Chicago Press, 1959, pp. 299-324.

¹¹"Since the early 1950s...there has been a striking shift towards apartment construction, and by 1965 more apartment units than single-family homes were built in Canada." Economic Council of Canada, *Fourth Annual Review*, Ottawa, Queen's Printer, 1967, p. 192.

however, that there is a rising demand for rental accommodation located within the built-up central city. This demand has resulted in a tremendous increase in apartment construction. In the last two years alone (1967 and 1968), newly constructed apartment units far outstripped single-family residences in Edmonton by over 9,400 to 4,500 units (Figure 1). Basically, the social conditions which are creating this demand for rental accommodation are rapid population growth, shifts in population composition and changing housing preferences.

Population Growth

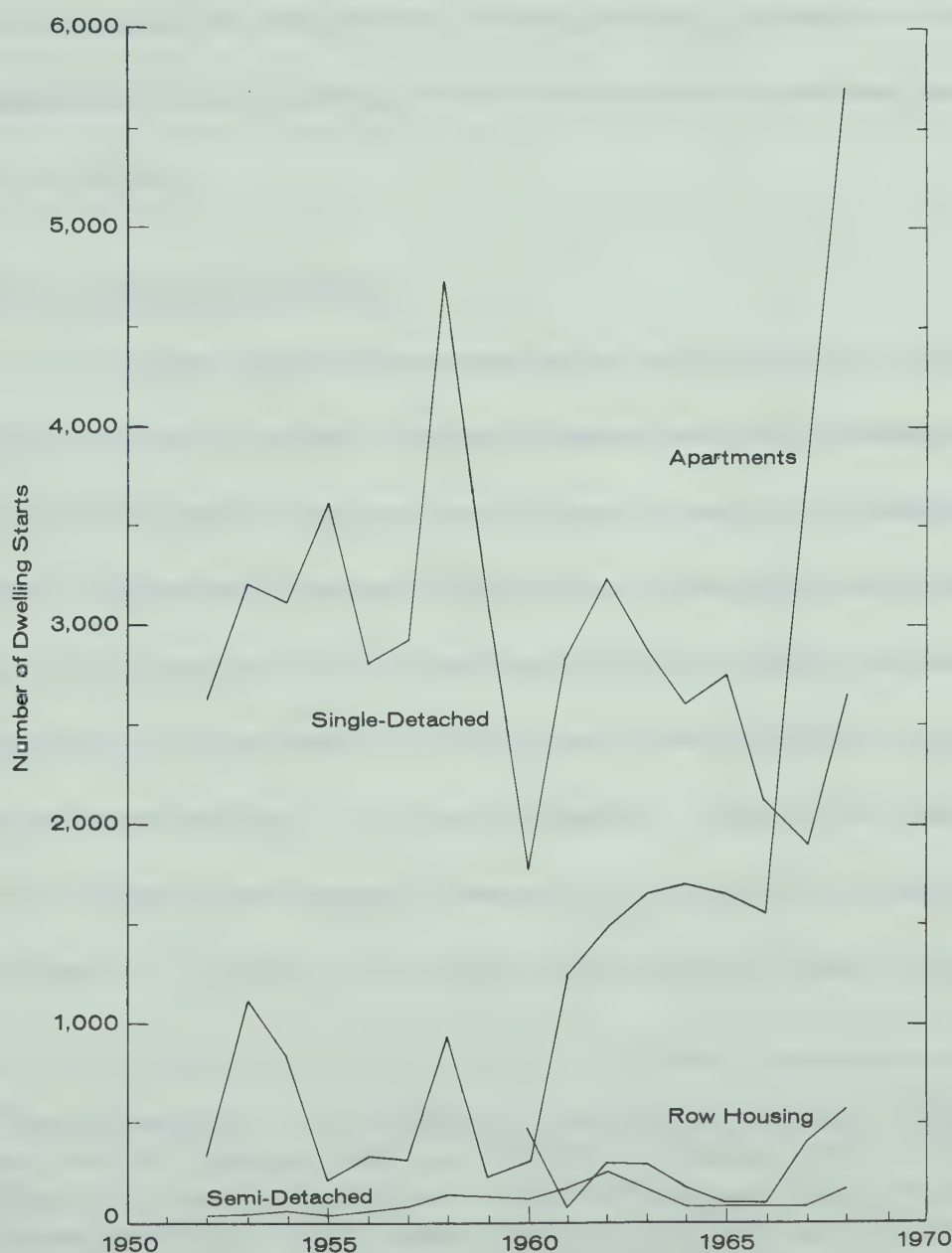
Edmonton is one of Canada's fastest growing cities. Between 1941 and 1966, the population of metropolitan Edmonton multiplied fourfold from 98,000 to 400,000 people.¹² It is natural to expect that a proportion of this increased population will demand rental housing. For example, Kupfer shows conclusively that many foreign immigrants reside in rental housing in several transition areas located northeast of Edmonton's central business district.¹³ These are older neighbourhoods in which extensive conversion of single-family to multiple-family dwellings has occurred. In the questionnaire survey

¹²Canada, Dominion Bureau of Statistics, Eighth Census of Canada, 1941, Population, vol. 1, Ottawa, King's Printer, 1946; and idem, Population and Housing Characteristics by Census Tracts, Edmonton, 1966, Ottawa, Queen's Printer, 1967.

¹³G. Kupfer, Edmonton Study: Community Opportunity Assessment, Edmonton, Government of Alberta, Department of Human Resources, 1967, p. 36.

Figure 1

DWELLING STARTS BY TYPE, METROPOLITAN EDMONTON 1952-1968



According to C.M.H.C., an apartment is a structure containing three or more dwelling units.

Source: Central Mortgage and Housing Corporation, 1968

L.M.

conducted for this thesis, it was found that of 54 persons indicating that they had arrived in Edmonton during the past year, 39 people, or 72 per cent, resided in rental units. Thirty-two of these 39 people were apartment tenants. These two examples are indicative of a housing demand, created by an expanding population, which is spurring extensive conversion and apartment redevelopment in the city.

Population Composition Changes

Several studies have pointed to the recent increase in size of two segments of the population which typically demand rental accommodation.¹⁴ Both the 19 to 24 years of age group and the over 65 years of age category have expanded considerably. Because it has long been a pattern for young persons, either single or newly married, to rent dwellings before entering the market for sales housing, the large number of children born in the 1940s is now beginning to demand rental housing. This is true in Edmonton. Between 1961 and 1966, the 19 to 24 years of age segment increased by 27 per cent from 25,828 to 32,845 people.¹⁵ Similarly, the number of persons over 65 years of age grew

¹⁴See for example: A. K. Ekersberg, "Housing for the Elderly," Appraisal Journal, vol. 30 (October 1962), pp. 523-534; C. Fowke, "Why the Surge in Apartments?," Canadian Builder, vol. 13 (July 1963), pp. 28-31; A. Melamed, "High-Rent Apartments in the Suburbs," Appraisal Journal, vol. 30 (April 1962), pp. 270-289; W. F. Smith, The Low Rise Speculative Apartment, Research Report No. 25, Centre for Real Estate and Urban Economics, University of California, 1964, pp. 29-30.

¹⁵Canada, Dominion Bureau of Statistics, Population and Housing Characteristics by Census Tracts, Edmonton, 1961 and 1966, Ottawa, Queen's Printer, 1963 and 1967.

significantly from 19,542 to 28,286 people, a jump of 44 per cent.¹⁶

Changing Housing Preferences

Apartment living, apparently, has become increasingly more acceptable to a wider range of people than it once used to be.¹⁷ As the size of the city has increased (and with it transportation costs and travelling time), as apartment design has become oriented towards increasingly sophisticated demands, and as the costs of homeownership have continued to rise, the preference for apartment residence has become more prevalent. The conveniences of built-in services and the lure of living close to downtown job, shopping and cultural activities appear to be ample compensation for the relative lack of privacy in apartment living. Developers are capitalizing on these new housing choices and to meet such demands, they are redeveloping properties near the core of the city and other focal points. Such decisions aid in the formation of transition areas.

ECONOMIC CONDITIONS

Three important economic aspects which are influential in changing

¹⁶Ibid.

¹⁷This trend is discussed in: Bank of Nova Scotia, "Apartment Boom In Canada," *Monthly Review* (October 1965), 4 pp.; L. S. Bourne, "Market, Location, and Site Selection," *op. cit.*, pp. 211-216; B. J. Frieden, "Some Local Preferences in the Urban Housing Market," *Journal of the American Institute of Planners*, vol. 27 (November 1961), pp. 316-324; and E. T. Rashleigh, "Observations on Canadian Cities, 1960-1961," *Plan Canada*, vol. 3 (September 1962), p. 70.

the character of residential districts are associated with the functional growth of the city, investment opportunities and the rising cost of living. Like many other factors, these aspects do not work in isolation. Rather, they contribute significantly to effect change by interacting with other conditions as well as with each other.

Functional City Growth

Just as Edmonton's population has exploded, so too has the city's economy. One of the results of this functional expansion has been the formation of growth points in the community, near which employees working in these centres desire to live. For example, as the job pool of Edmonton's central business district has increased, a demand for nearby rental housing has arisen. Similarly, the rapid expansion of the University of Alberta and the Northern Alberta Institute of Technology has influenced conversion and apartment construction near these nuclei.¹⁸ Indeed, interviewed tenants who live in rental units near these centres, particularly students, professional and clerical staff people, cited the desire to be close to work as an important factor for living close to these points. In addition, the areal expansion of such focal points often casts a shadow upon the surrounding neighbourhood. This growth creates an atmosphere of speculation and frequently hastens the intensification of residential redevelopment.

¹⁸R. F. Windsor, The Campus Fringe of the University of Alberta, Unpublished M. A. thesis, University of Alberta, Edmonton, 1964, 133 pp.

Investment Opportunities

Because the redevelopment or conversion of properties may represent an opportunity for considerable financial gain, the value of the income to be realized from such an investment will often determine the feasibility of change taking place. The current availability of mortgage money and abundance of prospective apartment purchasers are helping to accelerate the trend to apartment construction.¹⁹ In Edmonton, profits exceeding \$50,000 are frequently being made from the sale of walk-up, two-and-a-half storey "speculative" apartments.²⁰

Rising Living Costs

The financial plight of many homeowners has been well documented by the recent Task Force on Housing conducted by the Federal Government.²¹ This study showed that rising living costs are prohibiting great numbers of people from owning homes. A recent report by the City of Edmonton Planning Department further suggests that of just over 90,000 families in the city, nearly 50,000 cannot afford to purchase new housing.²² A partial consequence of this situation has been the intensification of the demand for rental accommodation.

¹⁹W. F. Smith, The Low Rise Speculative Apartment, op. cit., pp. 19-35.

²⁰This figure was obtained from records kept in the Assessors Department, City of Edmonton, during the course of field work, 1968.

²¹News item in The Edmonton Journal, January 29, 1969, p. 1.

²²News item in The Edmonton Journal, January 17, 1969, p. 36.

Important, too, is the fact that some people are adding suites to their houses to supplement incomes so that they can afford to purchase sales housing. This type of decision, influenced by rising living costs, contributes to functional and structural change in residential areas.

CONDITIONS OF THE HOUSING STOCK

Many of the most common and obvious factors conducive to residential change and the formation of transition areas are associated with the physical form of the city. The age, condition and type of structures constituting the city's housing inventory are important considerations. In the transition process, older, and often obsolete, buildings are sometimes sought as the nucleus of a redevelopment project. Although Edmonton is a very young city, nearly 4,000 buildings, or 4.5 per cent of the housing stock, were in need of major repair according to the 1961 Census of Canada.²³ As well, just over 12,000 dwellings, or 13.3 per cent of the housing inventory, were built before 1920.²⁴ Such units are near the end of their structural life and consequently are ripe for replacement.²⁵ In addition, many houses constructed before 1920, or even

²³Canada, Dominion Bureau of Statistics, Population and Housing Characteristics, op. cit.

²⁴Ibid.

²⁵This is not always the case, as witness many older sections of a city, such as the Boyle Street neighbourhood in Edmonton, where partly because of the run-down or blighted condition of the district, redevelopment is not attracted. Such conditions, however, often influence conversion activity.

before 1940, are commonly either one-and-a-half or two storey dwellings. Because of their form and age, these types of houses are very suitable and likely to be converted to become multi-family residences. Older houses are also the most susceptible to filtering down of housing. Thus, the condition, age and type of dwellings which constitute the housing stock of the city are important factors which frequently determine whether or not change will occur. More specifically, they indicate where transition will be found in the city.

POLITICAL CONDITIONS

Political factors, as exemplified by zoning ordinances and urban renewal schemes, can have a significant influence on the formation of transition areas. By designating certain sections of the city to be the focus of conversion or redevelopment activity, zoning encourages the transition process to occur.²⁶ Similarly, urban renewal is an important factor causing change in the residential structure of cities.²⁷ Owing to the youth of Edmonton, however, urban renewal has not yet been an important tool in effecting change in this city.²⁸ An excellent example, though, of a particular political situation which

²⁶Personal communication, Mr. J. Masterton, Research Planner, City of Edmonton, February, 1969.

²⁷For a discussion of the role played by urban renewal see: M. L. Colean, Renewing Our Cities, New York, The Twentieth Century Fund, 1953, 181 pp.

²⁸M. H. Rogers, "Neighbourhood Improvement: The Edmonton Approach to Renewal," Appraisal Institute Magazine, vol. 9 (September 1965), pp. 13-27.

has exerted considerable influence in Edmonton was an order issued during World War II by the Federal Government. This called for "...making available every inch of domestic accommodation during a period of crisis."²⁹ This proclamation has resulted in the maintaining of hundreds of "illegal" suites, significantly altering the character of many residential areas in the city.

THE INFLUENCE OF TECHNOLOGY

Technological advancements have also contributed greatly to re-shaping the city.³⁰ For example, the advent and common use of the automobile facilitated decentralization and suburban growth, and the skyscraper and electric elevator made possible the development of high density land uses on small pieces of city real estate.³¹ Also, various new construction techniques, such as the "travelling crane," have made possible the building of high rise apartments more quickly, efficiently and economically.³² Redevelopment is encouraged,

²⁹City of Edmonton, Planning Department, Outline History of Illegal Suites, 1968, p. 1. (Mimeographed.)

³⁰See for example: R. L. Meier, "The Evolving Metropolis of New Technology," Planning and the Urban Community, ed. H. S. Perloff, Pittsburg, University of Pittsburg Press, 1961, pp. 28-42.

³¹J. Gottmann, "Why the Skyscraper?," Geographical Review, vol. 56 (April 1966), pp. 190-212.

³²The journal, Canadian Builder, contains many articles which point out the role of new construction methods in facilitating the construction of high rise and walk-up apartments. See for example: "The Slipform Method: A New System for Apartment Building in Canada," Canadian Builder, vol. 13 (September 1963), pp. 40-42.

as a result, and the formation of transition areas is expedited.

SUMMARY

Because of the paucity of research about the transition process, the many conditions which interact to modify the structural and functional character of residential areas are only now beginning to be recognized. Some of the more important factors conducive to change and their influence in facilitating redevelopment and encouraging the formation of transition areas have been suggested. It appears that these factors interact in three major stages to effect change. Initially, various segments of the population demand rental accommodation (social and economic conditions). To meet these requirements, developers determine the feasibility of a redevelopment project (financial and technological conditions). Finally, after a redevelopment project has been considered feasible, the physical form and pattern of the city are examined to determine the possible location of residential change (growth points and housing and political conditions). As well as illustrating the redevelopment aspects of the transition process, these three generalized stages hold equally true for the conversion of single-family to multi-family residences.

Chapter II

THE LOCATION OF RESIDENTIAL TRANSITION AREAS

INTRODUCTION

Since the late 1950s, apartment redevelopment has become an increasingly prevalent feature in many Canadian and American cities. Such redevelopment, which is the dominant form of functional and structural change in transition areas, is most common in older districts near the central business district and sub-nuclei within the urban area. Conversion activity, the other major form of change in transition areas, also predominates in older sections of the city, diminishing in intensity as distance from these sections increases. This chapter provides an analysis of the location of residential transition areas, both in relation to three widely known theories of urban growth and structure and to empirical field observations.

THEORIES OF URBAN STRUCTURE AND THE LOCATION OF TRANSITION AREAS

Three of the most widely analyzed theories on urban growth and structure are the concentric zone, sector and multiple-nuclei concepts.¹ Although criticized as oversimplifications of reality, these schemes nevertheless

¹These theories are discussed in: F. S. Chapin, Jr., Urban Land Use Planning, second edition, Urbana, University of Illinois Press, 1965, pp. 14-21.

provide a conceptual framework for determining the location of transition areas. All attempt to identify areas where the processes of aging and deterioration of the housing stock are likely to lead to transitional characteristics.

Burgess' Concentric Zone Concept²

According to Burgess, the form and pattern of the city consists of a series of five concentric zones (Figure 2). Basic to this concept is the fact that each zone would "...extend its area by the invasion of the next outer zone."³ As more intensive land uses replace less intensive uses in a process of succession, transition areas characterized by dwelling conversion develop where the boundaries of these zones meet. In this manner, single-family houses are converted to multiple-family dwellings in an outward progression from the city's centre. As a result, change is directly related to the age of the housing stock and the growth pattern of the city. This model, however, makes no provision for apartment redevelopment.⁴

Hoyt's Sector Concept⁵

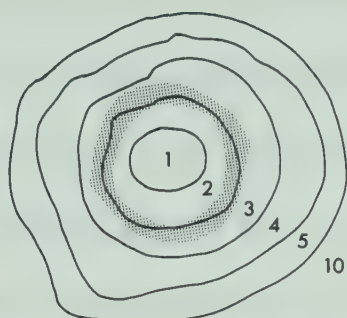
²E. W. Burgess, "The Growth of the City: An Introduction to a Research Project," The City, eds. R. E. Park et al., Chicago, University of Chicago Press, 1925, pp. 47-52.

³Ibid., p. 49.

⁴This omission is understandable because during the 1920s, apartment redevelopment had not yet become a common feature of the urban growth process.

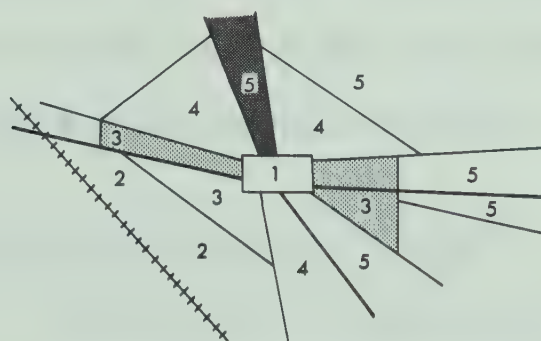
⁵H. Hoyt, The Structure and Growth of Residential Neighbourhoods in American Cities, Washington, United States Government Printing Office, 1939, 149 pp.

THEORIES OF URBAN STRUCTURE and the LOCATION OF TRANSITION AREAS

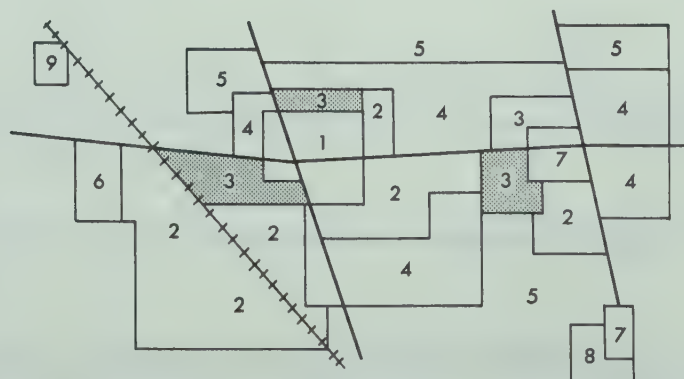


CONCENTRIC ZONE (Burgess)

ZONE	TYPE OF LAND USE
1	Central Business District
2	Wholesale and Light Manufacturing
3	Low-Class Residential
4	Medium-Class Residential
5	High-Class Residential
6	Heavy Manufacturing
7	Outlying Business District
8	Residential Suburb
9	Industrial Suburb
10	Commuters' Zone



SECTOR (Hoyt)



MULTIPLE-NUCLEI (Harris and Ullman)

Hoyt disagreed with the concentric zone theory of urban growth. He felt that residential areas expand in sector-like fashion from a central core "...along main transportation lines or along lines of least resistance."⁶ Like Burgess, though, Hoyt placed emphasis on aging and deterioration as determinants of the location of residential change: "Thus, in the framework of the city there is a constant dynamic shifting of rental areas....Physical depreciation of structures and the aging of families constantly are lessening the vital powers of the neighbourhood."⁷ If we accept Hoyt's premise, conversion activity will be located in sectors radiating from the central business district (Figure 2). Hoyt also initiated the idea that "deluxe high-rent apartment areas tend to be established near the business centre in older areas. (This was) one apparent exception to the rule that high-rent neighbourhoods do not reverse their trend of growth."⁸

Harris and Ullman's Multiple-Nuclei Concept⁹

In direct contrast to Burgess and Hoyt, Harris and Ullman believed that "in many cities the land-use pattern is built not around single centres but

⁶C. H. Harris and E. L. Ullman, "The Nature of Cities," Readings in Urban Geography, eds. H. M. Mayer and C. F. Kohn, Chicago, University of Chicago Press, 1959, p. 283.

⁷H. Hoyt, "The Pattern of Movement of Residential Neighbourhoods," Ibid., p. 509.

⁸Ibid., p. 505. The sector theory is further analyzed in: L. Rodwin, "The Theory of Residential Growth and Structure," Appraisal Journal, vol. 18 (July 1950), pp. 295-317.

⁹Harris and Ullman, op. cit., pp. 277-286.

around several nuclei."¹⁰ Each of these centres specializes in a particular kind of function (Figure 2). In all three models, however, there is agreement concerning the location of residential change: "Because of obsolescence of structures, the older margins of residential districts are fertile fields for invasion by groups unable to pay high rents."¹¹ Thus, change is found adjacent to other nuclei as well as the central business district. For example, an once isolated community now engulfed by city expansion might be a focal point for functional change. Residential redevelopment is not considered in this concept.

THE LOCATION OF TRANSITION AREAS IN EDMONTON¹²

Despite recent trends to peripheral development, apartment construction in Edmonton remains largely concentrated within the bounds of the built-up central city. In fact, as Figure 3 clearly reveals, most apartments to date have located within those parts of the city that were established by 1945. In this city-wide context, other transitional patterns are evident. Most apartment redevelopment is located near the central business district, functional growth points (such as the University of Alberta, the Northern Alberta Institute of Technology and the Jasper Place and Strathcona business centres), along major arterials and over-

¹⁰Ibid., p. 283.

¹¹Ibid.

¹²Because it was beyond the scope of this thesis to map the distribution of conversion activity in the city, this aspect of the transition pattern is discussed only briefly. Emphasis is placed on areas of apartment redevelopment.

Figure 3

LOCATION of APARTMENT CONSTRUCTION in EDMONTON, 1963-1968



Built-Up 1945 Central City -----

Represents One Apartment •

L. M.

0 1 2 miles

Source : Assessors Department,
City of Edmonton,
1968

looking the North Saskatchewan River valley (Figure 3).

Existing apartment clusters also serve to attract further redevelopment, largely reflecting the channelling effect of zoning. This fact is illustrated in Table 1, which lists various areal housing characteristics (such as age and median value of housing by census tract) that can be related to apartment redevelopment. For example, Census Tracts 14 and 19, which are located close to the central business district and had the greatest concentration of apartments in the city in 1961, attracted the most redevelopment between 1964 and 1968 (Table 1). However, once an area is fully developed either to the limits of zoning density controls or to the point where rising land costs deter development, apartments may shift to other parts of the city. Shifts in apartment construction have taken place in Edmonton (Figure 4). In particular, that area near the Northern Alberta Institute of Technology (Census Tract 4) has emerged since 1966 as one of the most active areas of apartment redevelopment in Edmonton. Many geographic factors, therefore, have influenced the distribution of transition areas distinguished by amount, sequence and types of redevelopment.

Redevelopment Within Older Residential Districts

Because older properties are often sought as the nucleus of a redevelopment scheme, most apartment construction is occurring in older residential districts of Edmonton (Table 1 and Figure 3). Some of Edmonton's oldest established areas, though, have not yet attracted redevelopment. This is most noticeable in that area, which is the city's nearest approach to a slum, east of the central business district (Census Tract 20). Here, many houses need repairs

TABLE 1 — SELECTED HOUSING CHARACTERISTICS, BY CENSUS TRACT, EDMONTON, 1961

Census Tract or Area	Total Occupied Households	Per Cent Single- Detached	Per Cent Apartments	Per Cent Constructed Before 1920	Per Cent Constructed Before 1945	Median Value Housing	Apart- ments Built 1964-68	Suites Added 1964-68
1	1,708	84.3	13.0	6.9	24.6	13,540	11	194
2	2,127	73.7	19.2	6.3	26.1	13,762	41	686
3	1,788	68.7	22.7	-	12.4	14,325	4	42
4	822	75.8	22.4	-	16.5	12,672	32	499
5	1,593	82.9	16.5	18.3	55.8	11,642	2	24
6	1,892	83.2	13.7	16.0	51.4	12,741	28	441
7	2,180	78.4	19.1	9.1	33.0	12,186	2	24
8	1,407	63.1	34.5	-	33.0	13,958	19	400
9	1,582	55.3	31.5	-	19.0	15,232	1	72
10	1,899	60.1	29.0	36.7	84.3	10,652	-	-
11	1,643	74.6	21.2	14.6	71.9	11,154	2	29
12	1,383	80.8	18.9	18.0	49.2	12,500	-	-
13	1,263	75.5	22.4	27.2	56.1	13,684	7	140
14	2,662	45.6	48.1	19.8	40.1	15,067	94	1, 974
15	1,354	31.0	62.1	49.8	79.2	11,607	-	-
16	1,427	79.7	16.8	14.4	43.2	15,845	1	9
17	2,146	92.3	-	-	21.8	17,154	-	-
18	2,121	45.6	43.9	26.1	67.1	16,366	32	1, 140

TABLE 1 — CONTINUED

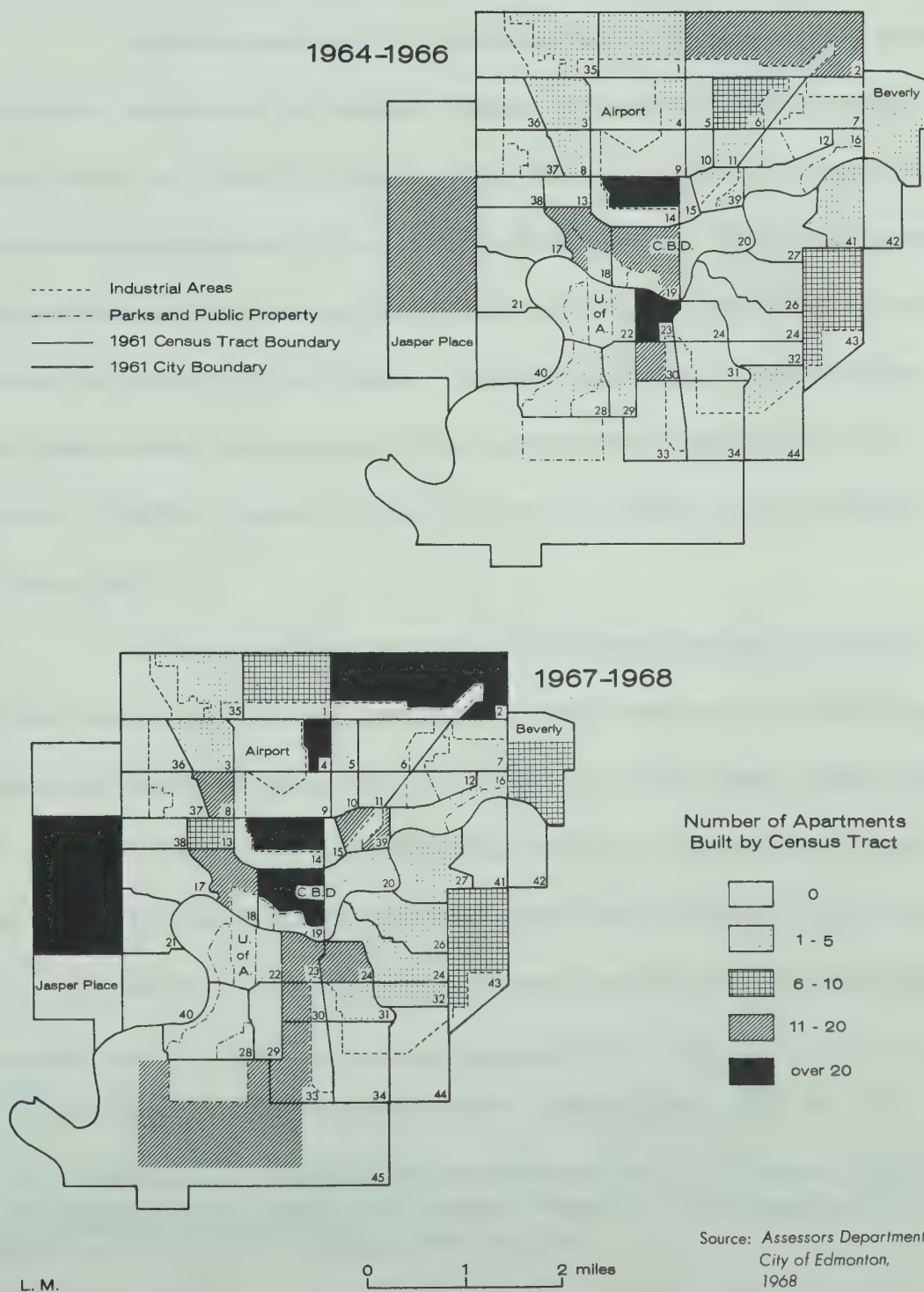
Census Tract or Area	Total Occupied Households	Per Cent Single- Detached	Per Cent Apartments	Per Cent Constructed Before 1920	Per Cent Constructed Before 1945	Median Value Housing	Apart- ments Built 1964-68	Suites Added 1964-68
19	3,920	16.2	76.7	47.5	79.6	17,108	41	1,991
20	2,603	40.1	54.9	51.6	88.6	9,920	2	39
21	1,277	98.4	-	-	6.7	20,214	-	-
22	1,310	81.6	15.6	21.8	60.4	22,994	6	709
23	989	51.8	45.7	45.7	75.3	14,301	36	889
24	1,972	49.6	45.7	27.3	60.1	13,380	17	560
25	2,373	71.5	22.5	7.1	31.4	13,626	5	224
26	2,831	64.3	24.7	4.9	10.6	15,534	4	83
27	1,875	57.2	38.7	-	12.8	15,740	3	47
28	1,044	82.0	17.0	-	6.8	20,363	1	20
29	2,051	79.6	17.9	-	24.5	14,514	3	237
30	1,275	64.2	29.3	27.6	61.0	12,840	24	518
31	1,647	64.4	34.7	12.2	49.9	10,359	4	79
32	1,421	77.7	22.3	-	15.6	12,149	5	44
33	1,659	80.1	7.7	-	19.4	14,149	12	331
34	1,436	60.2	11.8	3.6	7.9	14,698	-	-
35	3,193	75.7	15.0	-	11.4	14,482	4	160
36	907	85.4	-	-	3.1	15,410	-	-

TABLE 1 — CONTINUED

Census Tract or Area	Total Occupied Households	Per Cent Single- Detached	Per Cent Apartments	Per Cent Constructed Before 1920	Per Cent Constructed Before 1945	Median Value Housing	Apart- ments Built 1964-68	Suites Added 1964-68
37	1,526	42.4	45.6	-	3.6	16,084	-	-
38	1,393	76.2	16.2	-	-	15,862	-	-
39	2,019	34.0	60.3	39.5	69.3	11,818	21	427
40	1,253	99.6	-	-	1.2	20,749	-	-
41	1,598	99.7	-	-	.3	16,639	1	94
42	1,317	83.3	-	-	-	15,855	-	-
43	928	96.1	-	-	8.0	17,323	15	304
44	1,199	90.9	-	-	5.9	15,952	1	22
45	172	74.4	-	-	34.9	20,277	12	405
Jasper Place	2,017	90.2	7.7	11.9	12.5	13,426	56	1,117
Beverly	7,072	89.4	6.7	11.9	14.4	12,246	9	161
Edmonton (metro area)	89,009	69.4	24.4	13.2	33.7	14,517	571	13,955

Sources: The data for apartments built between 1964 and 1968 was collected from the Assessors Department, City of Edmonton, 1968. Housing data is from: Canada, Dominion Bureau of Statistics, Population and Housing Characteristics by Census Tracts, Edmonton, 1961, Ottawa, Queen's Printer, 1963.

SHIFTS IN APARTMENT CONSTRUCTION



and lots having twenty-five foot frontages are common.¹³ These conditions apparently discourage redevelopment, although conversion activity is prevalent.¹⁴

Redevelopment Near the Central Business District

Extensive apartment redevelopment and conversion activity abuts the southern, western and northwestern margins of Edmonton's downtown area (Census Tracts 14, 18 and 19; Table 1). High rise apartments are concentrated immediately south and west of the central business district. This particular trend is the result of high land values, current zoning ordinances and heavy demands for rental accommodation in this area. Generally, apartments have replaced older houses in what was once one of the most fashionable neighbourhoods in Edmonton. This fact is shown in Table 1 by the high median value of housing for Census Tract 19.

Although walk-up, two-and-a-half storey apartments are found south and west of the downtown core, they are more common to that district to the northwest which coincides with Census Tract 14. In this area, older houses were removed initially, but newer dwellings, built during World War II, are now being replaced as redevelopment expands outward from the central business district.¹⁵ The pattern of conversion and apartment construction near Edmonton's

¹³City of Edmonton, Planning Department, General Plan, 1967, p. 112.

¹⁴Other obstacles to redevelopment are discussed in: L. S. Bourne, Private Redevelopment of the Central City, Research Paper No. 112, Department of Geography, University of Chicago, 1967, p. 34.

¹⁵This housing information was obtained from records kept in the Assessors Department, City of Edmonton, during the course of field work, 1968.

central business district, as shown, reflects elements of the urban structure theories of Burgess and Hoyt.

Redevelopment Near Functional Growth Points

In Edmonton, conversion and redevelopment are occurring near the University of Alberta (Census Tracts 22 and 29), the Northern Alberta Institute of Technology (Census Tract 4), and the community centres of Strathcona (Census Tracts 23, 24 and 30) and Jasper Place (Figure 3). Strathcona, once a separate town before joining Edmonton in 1912,¹⁶ is the business focal point for the south side of the metropolitan area. From this centre, transition areas expand concentrically into the adjacent neighbourhoods and sectorally along Whyte (82) Avenue. A similar transition pattern occurs to the east of the University of Alberta (Figure 3).

Residential areas in transition near Jasper Place and the Northern Alberta Institute of Technology are characterized differently. As seen in Figure 4, they have attracted redevelopment mainly in the last two years. Also, there has been only limited conversion of dwellings, and walk-up apartments have generally replaced houses built as recently as twenty years ago.¹⁷

¹⁶J. G. MacGregor, Edmonton: A History, Edmonton, M. G. Hurtig, 1967, p. 312.

¹⁷Some very old houses, constructed during the land boom period from 1910 to 1914, were removed during the initial stage of the redevelopment process. For a brief account of this boom period see: M. H. Rogers, "Neighbourhood Improvement: The Edmonton Approach to Renewal," Appraisal Institute Magazine, vol. 9 (September 1965), p. 15.

Redevelopment Along Major Arterials

The obvious advantage of accessibility is attracting considerable apartment construction to those major thoroughfares which lead into the downtown business core and other functional centres of Edmonton (Figure 3). According to city planning officials, redevelopment sometimes is channelled to such locations because apartments serve as "buffers" to protect the property values of surrounding single-family residences.¹⁸ Furthermore, houses adjacent to major arterials are more likely to be in poor condition and in need of replacement than houses occupying other sites. Jasper and Whyte Avenues and 82, 124 and 149 Streets are arterials attracting a good deal of redevelopment. Recently, apartments have also started to locate along 97 and 101 Streets and 118 Avenue.

Redevelopment Near the North Saskatchewan River Valley

Seeking the amenities of view and open space, high rise apartments have located along the North Saskatchewan River valley, thus creating a striking and dominant feature of the Edmonton landscape. Some of these apartments are not redevelopment projects, but a greater number, particularly those south and west of the central business district and in the University of Alberta—Strathcona area, are replacing older, once highly fashionable houses.

Redevelopment Dispersed Throughout the City

When generalizations are devised, exceptions become evident.

¹⁸Personal Communication, Mr. J. Masterton, Research Planner, City of Edmonton, February, 1969.

Such is the case in Figure 3 where isolated apartments can be observed which are not included in any distinct transition area. These buildings are commonly replacing older and sometimes obsolete properties, and are primarily related to job, shopping and transportation facilities. Considering the growth patterns of more fully developed transition areas, it is reasonable to believe that future transition areas will be formed around these isolated developments.

ZONING AND THE LOCATION OF TRANSITION AREAS

The present distribution of apartment redevelopment, outlined above, reflects the general zoning principles of the city:

"The general purpose of this (apartment) district is to encourage the orderly transition, renewal or redevelopment of older low density residential areas which by reason of their proximity to traffic routes, commercial centres and accessibility warrant a more economical and intensive use of land with a wide range of residential accommodation."¹⁹

Redevelopment, therefore, cannot take place unless the project's potential site is consistent with these principles and is zoned accordingly. However, if a developer can provide valid evidence demonstrating why zoning in any area should be changed, zoning can be changed. For example, the recent apartment boom near the Northern Alberta Institute of Technology, located in an established area with access to schools, employment centres, shopping and transportation facilities, is a good example of the willingness of city officials to

¹⁹City of Edmonton, Planning Department, Zoning Bylaw No. 2135, 1964, n. p.

co-operate when change was proven necessary.²⁰ However, just as developers, or even local residents, can call for change in an area,²¹ redevelopment can be checked by a petition from the established residents of a neighbourhood.²² To sum up, rather than directly stimulating or restricting redevelopment, zoning channels such activity to areas where the location and conditions for change are most warranted.

SUMMARY

The pattern of residential change in Edmonton shows characteristics of the concentric zone, sector and multiple-nuclei concepts of urban growth and structure: "Each of these hypotheses has a certain validity....they are mutually compatible, and each partially describes the typical city."²³ Conversion, for example, is concentrated in those older sections of Edmonton close to the central business district, expanding and diminishing in intensity concentrically and sectorally from this central point. This transitional pattern is also

²⁰Personal Communication, Mr. J. Masterton, Research Planner, City of Edmonton, February, 1969.

²¹It was largely the petitioning of local residents, mainly because they wished to raise the speculative value of their properties, that zoning changes were introduced to permit apartment development along 156 Street. Ibid.

²²The Edmonton Journal has printed various articles which describe such incidents. See for example: G. Demarino, "Apartment Developers Battle Over Development Plan," The Edmonton Journal, May 5, 1967, p. 30.

²³H. M. Mayer, "Spatial Change Inside the American City," Problems and Trends in American Geography, ed. S. B. Cohen, New York, Basic Books, 1967, p. 54.

repeated near other growth points, thus illustrating an aspect of the multiple-nuclei model.

With respect to the location of transition areas characterized by redevelopment, support of the sector theory is further warranted when observing apartment construction in that better class residential district which lies immediately to the west of Edmonton's central business district. Apartment redevelopment which is currently taking place in other parts of the city, however, is not provided for in the sector, concentric zone or multiple-nuclei concepts. Rather, the location of apartments near functional growth points, the river valley and major arterials can be attributed to factors such as favourable environmental amenities and easily accessible job, shopping, transportation and cultural facilities.²⁴

Similar redevelopment trends have been noted in other Canadian and American cities. McAfee has pointed out that the "West End" in Vancouver, an area of splendid environmental factors and once fashionable homes, now is characterized by many high rise apartments.²⁵ In Calgary, too, apartment redevelopment has been drawn in a sector pattern towards "...prestige communities

²⁴An analysis of apartment location, employing correlation techniques and worthy of further empirical testing, is contained in: L. S. Bourne, "Market, Location, and Site Selection in Apartment Construction," The Canadian Geographer, vol. 12 (Winter 1968), pp. 211-226.

²⁵R. McAfee, Residence on the Margin of the Central Business District: A Case Study of Apartment Development in the West End of Vancouver, B. C., Unpublished M. A. thesis, University of British Columbia, Vancouver, 1967, 133 pp.

such as Mount Royal."²⁶ Considerable apartment construction was noted by Bourne in the suburban areas of metropolitan Toronto, as well as adjacent to the central business district and other nuclei, particularly the subway.²⁷ And, in many cities in the United States, construction of apartments is oriented towards expressways radiating from the central cores of these cities.²⁸ These locational trends, shown to occur in Calgary, Edmonton, Toronto and Vancouver, are not restricted to these cities alone. They have also been observed in most other large urban areas across Canada.²⁹

²⁶P. J. Smith, Change in a Youthful City: Calgary Alberta, Edmonton, Department of Geography, University of Alberta, 1968, pp. 19-20. (Mimeographed.)

²⁷Bourne, op. cit.

²⁸H. Hoyt, "Expressways and Apartment Sites," Traffic Quarterly, vol. 12 (April 1958), pp. 263-268.

²⁹These trends are reviewed annually in the periodical, Canadian Builder. See for example: "Survey 1968: Apartments," Canadian Builder, vol. 18 (June 1968), pp. 53-71.

Chapter III

DIMENSIONS OF LAND USE CHANGE IN TRANSITION AREAS

INTRODUCTION

During the transition process, apartment redevelopment and dwelling conversion substantially alter the character of a residential area. In Chapters 1 and 2, some conditions for the formation and distribution of transition areas were outlined. The remaining sections of this thesis comprise an analysis of the processes of functional, structural and population change. This chapter focuses upon temporal and spatial dimensions of land use change as a measure of functional change, and is concerned specifically with the amounts, rates and patterns of land use change. Land use succession, an important aspect of the transition process, is also examined.

THE STUDY AREAS

The seven areas chosen for study (Figure 5), although similar in redevelopment and conversion activities, differ in age, types and conditions of housing. Table 2 shows the development of the study areas by the period of the initial occupation of each lot, while the land use structures of each area for the years 1953, 1958, 1963 and 1968 are presented in Tables 3 - 6.

In Area 1 there is limited conversion activity scattered throughout, but single-family residences dominate the land use pattern (Table 6). Walk-up

Figure 5

LOCATION OF THE STUDY AREAS



Built-Up 1945 Central City -----

Represents One Apartment •

L. M.

0 1 2 miles

Source : Assessors Department,
City of Edmonton,
1968

TABLE 2 — SETTLEMENT OF THE STUDY AREAS BY THE PERIOD OF INITIAL OCCUPATION OF EACH LOT
(by percentage of total lots)

Period	Study Areas						
	1	2	3	4	5	6	7
Prior to 1911	10.9	-	2.1	4.0	13.3	9.0	5.3
1911 to 1920	21.1	16.4	45.2	38.0	27.8	14.2	13.0
1921 to 1930	2.4	4.8	23.7	43.0	10.0	14.9	8.4
1931 to 1940	3.1	4.8	7.5	9.0	3.3	14.2	.8
1941 to 1950	54.7	69.2	21.5	5.0	30.0	32.8	63.4
1951 to 1960	7.8	3.8	-	1.0	8.9	8.2	9.1
1961 to 1968	-	-	-	-	6.7	4.5	-
Still vacant	-	1.0	-	-	-	2.2	-
Total residential lots	128	104	93	100	90	134	134

Source: Assessors Department, City of Edmonton, 1968.

TABLE 3 — RESIDENTIAL LAND USE STRUCTURE OF THE STUDY AREAS, 1953¹
(by percentage of total lot area)

Land Use Type	1	2	3	Study Areas				All Areas	
				4	5	6	7	Average	Range
Single-family	81.9	100.0	77.8	61.8	61.1	68.4	76.0	77.2	61-100
Basement conversions	14.9	-	9.5	8.5	16.2	10.7	15.2	10.6	0-16
Other conversions	-	-	12.7	25.2	4.1	3.9	-	5.7	0-25
Du, tri, quadruplexes	.8	-	-	-	2.0	-	-	.4	0-2
Walk-up apartments	-	-	-	1.1	-	5.2	-	.7	0-5
High rise apartments	-	-	-	-	-	-	-	-	-
Commercial-residential	.8	-	-	1.3	8.2	1.6	1.2	1.5	0-8
Vacant land	-	-	-	2.1	8.4	10.2	7.6	3.9	0-10
Vacant buildings	-	-	-	-	-	-	-	-	-
Under Construction	-	-	-	-	-	-	-	-	-
Total residential area (000's of square feet)	900	758	595	595	429	537	830	4,644	

¹Excludes non-residential land use.

Source: Assessors Department, City of Edmonton, 1968.

TABLE 4 — RESIDENTIAL LAND USE STRUCTURE OF THE STUDY AREAS, 1958¹
(by percentage of total lot area)

Land Use Type	1	2	3	Study Areas			7	All	
				4	5	6		Areas Average	Range
Single-family	86.1	99.1	60.7	60.6	36.6	61.4	67.1	71.2	37-99
Basement conversions	12.3	.9	18.1	4.8	39.2	20.8	30.3	16.5	1-39
Other conversions	-	-	17.3	27.9	5.5	5.8	-	7.0	0-28
Du, tri, quadruplexes	.8	-	1.3	-	4.1	1.7	-	.9	0-4
Walk-up apartments	-	-	2.6	4.0	-	2.8	1.1	1.3	0-4
High rise apartments	-	-	-	-	-	-	-	-	-
Commercial-residential	.8	-	-	1.3	9.2	1.6	1.5	1.7	0-9
Vacant land	-	-	-	1.4	5.4	5.1	-	1.3	0-5
Vacant buildings	-	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	.8	-	.1	0-1
Total residential area (000's of square feet)	900	758	580	550	428	513	674	4,403	

¹Excludes non-residential land use.

Source: Assessors Department, City of Edmonton, 1968.

TABLE 5 — RESIDENTIAL LAND USE STRUCTURE OF THE STUDY AREAS, 1963¹
(by percentage of total lot area)

Land Use Type	1	2	3	Study Areas				7	All	
				4	5	6	6		Areas	Range
									Average	
Single-family	80.2	96.3	45.6	51.2	36.6	55.0		61.8	64.7	37-96
Basement conversions	17.4	1.9	13.5	4.8	40.7	23.0		31.2	17.7	2-41
Other conversions	-	-	17.8	31.2	3.1	6.6		1.1	7.5	0-18
Du, tri, quadruplexes	1.6	.9	6.4	-	4.1	3.4		-	2.2	0-4
Walk-up apartments	-	-	15.4	9.5	2.0	2.8		4.4	4.4	0-15
High rise apartments	-	-	-	1.9	-	-		-	.2	0-2
Commercial-residential	.8	-	1.3	1.4	9.2	1.6		1.5	1.8	0-9
Vacant land	-	-	-	-	4.4	4.2		-	1.0	0-4
Vacant buildings	-	-	-	-	-	-		-	-	-
Under construction	-	.9	-	-	-	3.4		-	.5	0-3
Total residential area (000's of square feet)	900	758	585	544	428	518		674	4,406	

¹Excludes non-residential land use.
Source: Assessors Department, City of Edmonton, 1968.

TABLE 6 — RESIDENTIAL LAND USE STRUCTURE OF THE STUDY AREAS, 1968¹
(by percentage of total lot area)

Land Use Type	Study Areas							All	
	1	2	3	4	5	6	7	Average	Range
Single-family	71.8	68.5	29.1	29.1	25.7	42.2	41.2	47.6	26-72
Basement conversions	16.6	.9	8.1	4.4	23.8	20.8	16.4	12.3	1-24
Other Conversions	-	-	12.8	19.2	9.8	6.7	-	6.0	0-19
Du, tri, quadruplexes	2.5	2.9	6.8	-	5.1	3.4	-	2.8	0-7
Walk-up apartments	7.5	12.9	40.6	8.8	16.0	22.5	38.6	19.9	8-41
High rise apartments	-	-	-	23.2	-	-	-	3.1	0-23
Commercial-residential	.8	-	1.3	1.3	9.3	1.7	1.5	1.8	0-9
Vacant land	-	-	1.3	.8	1.0	2.7	-	.8	0-3
Vacant buildings	-	2.9	-	-	-	-	-	.4	0-3
Under construction	.8	11.9	-	13.2	9.3	-	2.3	5.3	0-13
Total residential area (000's of square feet)	900	758	555	592	423	509	641	4,378	

¹Excludes non-residential land use.
Source: Assessors Department, City of Edmonton, 1968.

apartments in this area are found only along a major thoroughfare, 82 Street. Single-family houses, built mainly during the 1940s, also characterize Area 2, but here the influence of the Northern Alberta Institute of Technology in particular has led to considerable apartment development.

Areas 3 and 4, located close to the central business district, are older neighbourhoods of once fashionable homes, and have been in transition longer than the other study areas. Dwelling conversion has been occurring here since the late 1920s and these areas were among the first in Edmonton to attract apartment redevelopment during the late 1950s and early 1960s. Area 4 is further characterized by high rise apartments which overlook the North Saskatchewan River valley.

Two-and-a-half storey apartments located in Areas 5 and 6 have been constructed mainly since 1965, and have frequently replaced structurally obsolete dwellings. Basement and other converted houses in these two areas are often rented by students from the University of Alberta. In Area 7, situated northwest of the downtown core of Edmonton, apartments have been built most intensively during the past two years. Like the other study areas, a major arterial runs through Area 7.

RESIDENTIAL LAND USE TYPES: AMOUNT AND RATE OF CHANGE

Measurement of Functional Change

To measure functional change, the number of residential properties and the square footage of each property, as classified by land use types,

were calculated at five year intervals—1953, 1958, 1963 and 1968 (Table 7 and Appendix C, Tables 1 - 7). These areal values have been graphed and mapped to show significant temporal and spatial patterns of functional change (Figures 6 and 9 - 15). The assessed land and building values of residential land uses were also graphed, thus emphasizing further the trends shown by changing property areas (Figures 7 and 8). To facilitate the comparison of change among areas, the square footage and the assessed land and building values have been calculated as percentages for each study area.

Single-Family Residences

Prior to apartment redevelopment, single-family houses dominated the residential pattern of each study area. In 1953, their importance ranged from 100 per cent of the land use structure in the more recently established Area 2, to approximately 60 per cent in the older districts 4 and 5, where considerable dwelling conversion had already taken place (Table 3). Throughout the study period, 1953 - 1968, the total number of single-family residences has been reduced by more than 40 per cent, from 585 to 339 (Table 7). Although the general trend is one of decline, there are variations within this overall pattern.

Between 1953 and 1958, there was an overall loss in all areas of 80 single-family units and a decrease in lot area of almost 13 per cent (Table 8). The greatest change occurred in Area 5, where there was an areal decrease of 40 per cent as a result of extensive conversion activities. Conversion processes were also very active in Area 3. At the other extreme, Area 1 showed an

TABLE 7 — CHANGES IN THE RESIDENTIAL LAND USE STRUCTURE, FOR ALL AREAS, 1953-1968¹

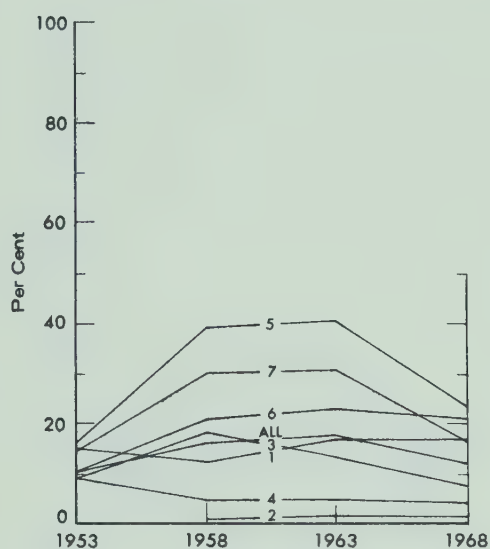
Land Use Types	1953			1958			1963			1968		
	Area ²	%	No. ³	Area	%	No.	Area	%	No.	Area	%	No.
Single-family	3,584	77.2	585	3,132	71.2	505	2,850	64.7	461	2,085	47.6	339
Basement conversions	493	10.6	76	728	16.5	123	780	17.7	132	539	12.3	96
Other conversions	264	5.7	40	308	7.0	49	329	7.5	51	260	6.0	42
Du, tri, quadruplexes	16	.4	2	41	.9	7	94	2.2	15	121	2.8	19
Walk-up apartments	34	.7	4	58	1.3	8	195	4.4	22	871	19.9	69
High rise apartments	-	-	-	-	-	-	10	.2	1	137	3.1	5
Commercial-residential	68	1.5	13	72	1.7	14	80	1.8	15	80	1.8	15
Vacant land	182	3.9	32	57	1.3	18	48	1.1	12	29	.7	6
Vacant buildings	-	-	-	-	-	-	-	-	-	23	.5	3
Under construction	-	-	-	4	.1	1	17	.4	2	230	5.3	12
Totals	4,644	100	752	4,403	100	725	4,406	100	711	4,378	100	606

¹Excludes non-residential land use.²Area is in 000's of square feet.³Props stands for properties.

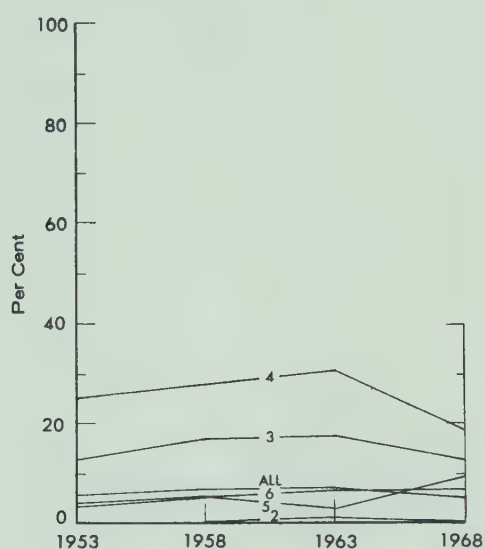
Source: Assessors Department, City of Edmonton, 1968.

DIMENSIONS OF CHANGE

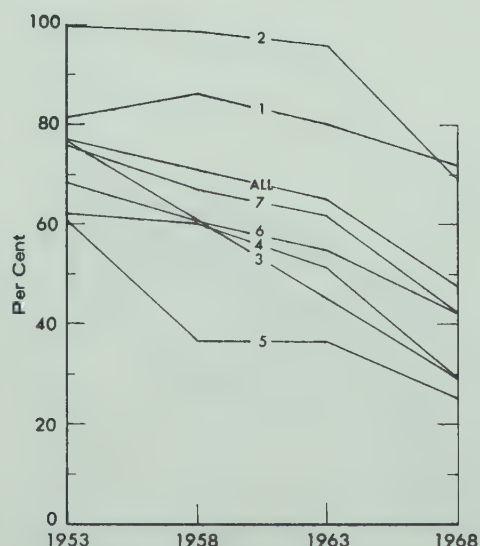
(By Percentage of Total Lot Area)



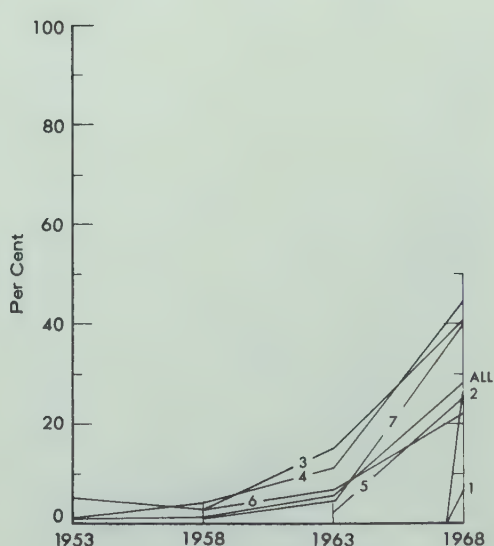
Converted Dwellings
with Basement Suites



Converted Dwellings
with Other Suites



Single-Family Residences



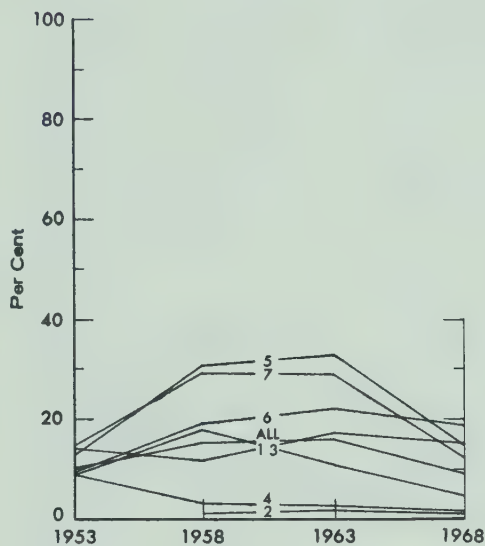
Walk-Up and High Rise
Apartments

Source: Assessors Office,
City of Edmonton,
1968

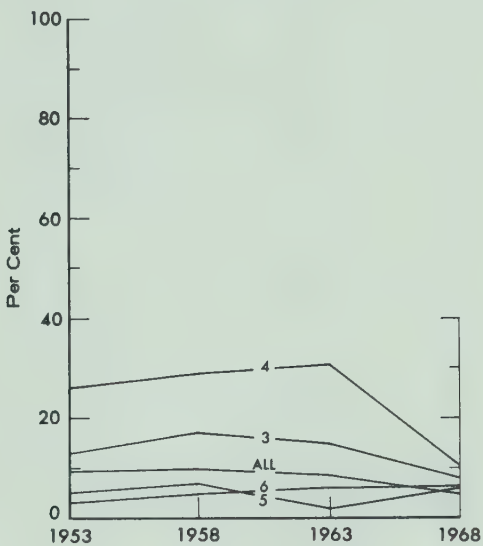
Figure 7

DIMENSIONS OF CHANGE

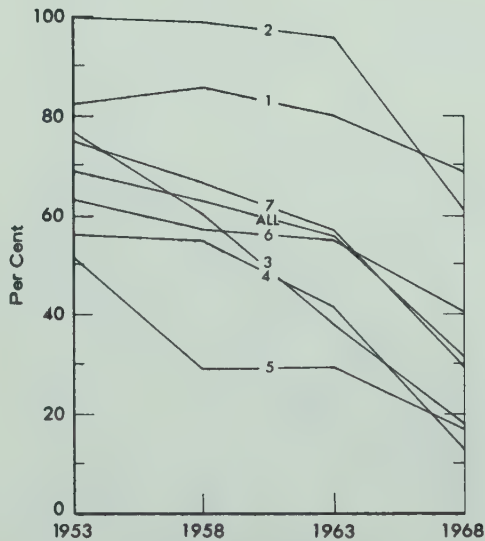
(By Percentage of Total Assessed Lot Value)



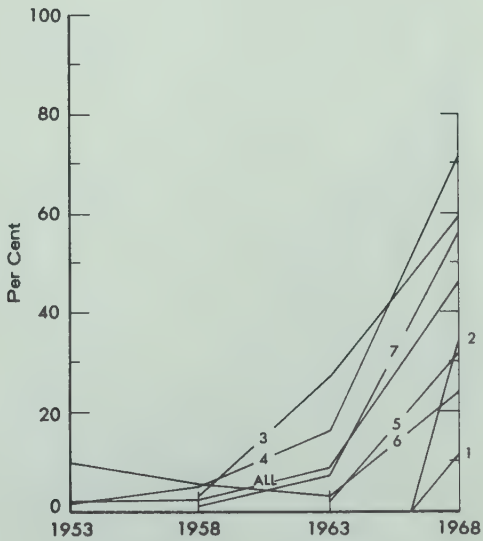
Converted Dwellings
with Basement Suites



Converted Dwellings
with Other Suites



Single-Family Residences

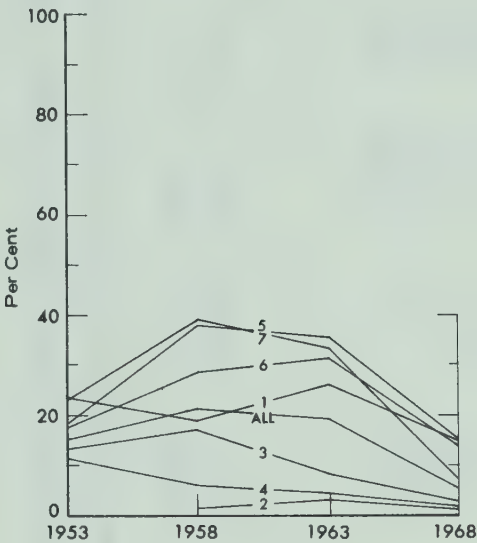


Walk-Up and High Rise
Apartments

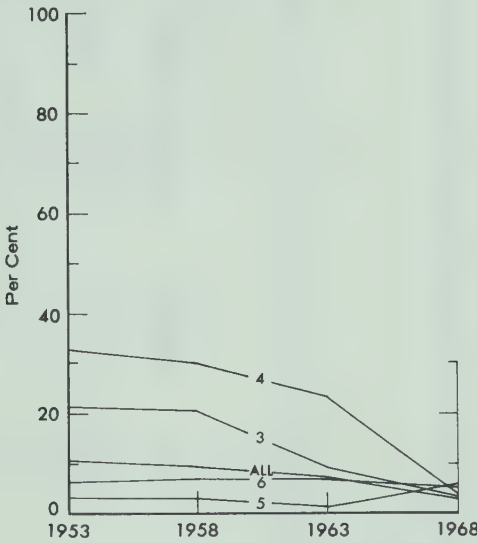
Source: Assessors Office,
City of Edmonton,
1968

DIMENSIONS OF CHANGE

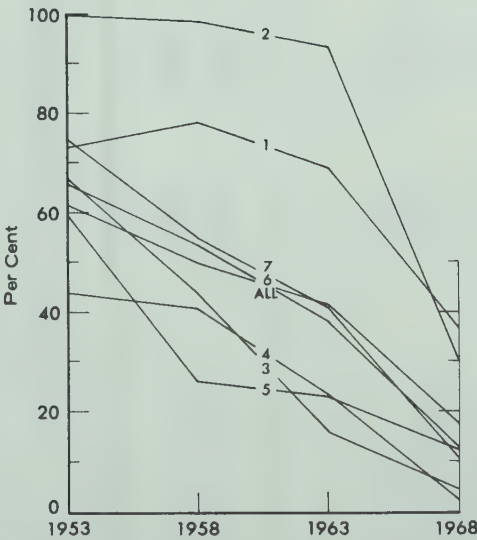
(By Percentage of Total Assessed Building Value)



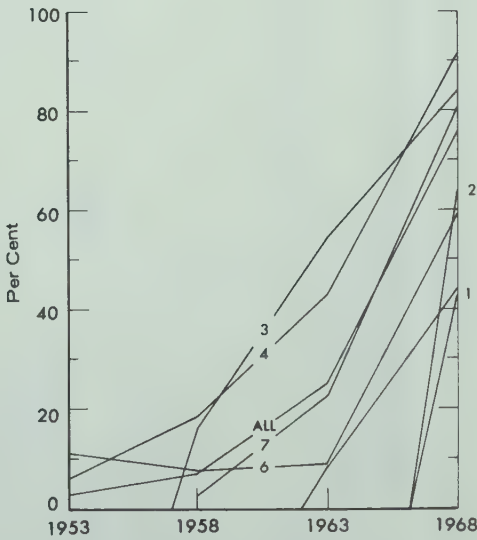
Converted Dwellings
with Basement Suites



Converted Dwellings
with Other Suites



Single-Family Residences



Walk-Up and High Rise
Apartments

Source: Assessors Office,
City of Edmonton,
1968

TABLE 8 — RATES OF CHANGE OF RESIDENTIAL LAND USE TYPES, FOR ALL AREAS, 1953-1968

Land Use Type	1953 Area ¹	1958 Area	% Change	1963 Area	% Change	1968 Area	% Change	Total Change
Single-family	3,584	3,132	- 12.6	2,850	- 9.0	2,085	- 26.8	- 41.8
Basement conversions	493	728	+ 47.6	780	+ 7.2	539	- 30.0	+ 9.3
Other conversions	264	308	+ 16.5	329	+ 6.9	260	- 20.9	- 1.3
Du, tri, quadruplexes	16	41	+153.7	94	+130.6	121	+ 28.2	+ 650.7
Walk-up apartments	34	58	+ 71.3	195	+232.2	871	+ 346.0	+2442.4
High rise apartments	-	-	-	11	-	137	+1211.3	+1211.3
Commercial-residential	68	72	+ 6.4	80	+ 10.4	80	-	+ 17.4
Vacant land	182	57	- 68.7	48	- 15.7	52	+ 9.0	- 83.6
Vacant buildings	-	-	-	-	-	23	-	-
Under construction	-	4	-	17	+325.0	230	+1252.9	+5650.0

¹ Area is in 000's of square feet.

Source: Assessors Department, City of Edmonton, 1968.

increase of 5 per cent because a number of converted dwellings reverted to single-family status. The remaining areas experienced losses of single-family residences, but it was slight in most cases (Appendix D, Tables 1 - 7).

The decline in the number of single-family houses continued during the period 1958 - 1963, with a fall from 505 to 461 (Table 7). The 9 per cent decrease in lot area, though, was slightly lower than before (Table 8). Once again, Area 3 experienced substantial decrease (24 per cent), while Area 4, which experienced a 27 per cent decrease, emerged as a new centre of apartment redevelopment (Appendix D, Tables 3 and 4). In Area 5, by contrast, the loss of single-family residences ceased completely and it became the most stable of all the study areas. The four remaining areas again showed slight decreases.

In the third period, 1963 - 1968, the number of single-family residences fell by a further 122, while their lot area decreased by 26 per cent. By 1968, single-family houses made up only 48 per cent of all residential properties as compared with 77 per cent fifteen years previously (Table 7). The most active change in the final period was in Areas 3, 4 and 7, each of which declined by approximately 40 per cent in single-family area (Appendix D, Tables 3, 4 and 7). It is also apparent, however, that all the other study areas experienced substantial losses, the most modest being the 10 per cent recorded in Area 1. The five years following 1963 were thus the most active as far as the loss of single-family residences was concerned. In both numbers of dwellings and the distribution of these dwellings through the study areas, the decrease was more extensive than ever before.

Converted Dwellings with Basement Suites

Converted houses with basement suites, although found in all study areas, are most prevalent in Areas 2, 5, 6 and 7, where newer types of buildings can accommodate such conversion activity. In those areas where older housing predominates, basement suites are limited in number. Also of great significance is the fact that basement suites have gone through three distinct phases in the study period (Figures 6 - 8).

The period 1953 - 1958 was characterized by rapid increase. The total number of basement conversions rose from 76 to 123, and their lot area increased by nearly 50 per cent (Tables 7 and 8). Expansion was greatest in Area 5; here, basement suites increased from 14 to 35, and their lot area by 135 per cent. Considerable gains were also experienced in Areas 6 and 7. Demands for rental accommodation by students of the nearby University of Alberta caused the marked increase in Area 6.

This was followed by a period of stabilization between 1958 and 1963, when the number of basement conversions increased by only nine, to a total of 132. There was a loss of three basement suites in Area 3, marking the beginning of the redevelopment of the sites of converted dwellings, but as a general rule the condition of stability applied to all areas.

The period 1963 - 1968 is distinguished by a significant decline in the number of dwellings with basement suites. The total for all areas stood at 96 in 1968 as compared to 132 five years before (Table 7). Decline was greatest in Areas 3, 5 and 7, where the decrease in lot area ranged from 40 to 50 per

cent (Appendix D, Tables 3, 5 and 7). The rate of decrease in basement conversion lot area for all areas, 31 per cent, is comparable to the 27 per cent rate of decrease of single-family residences during the same period (Table 8). Although there was an overall increase of twenty basement suites between 1953 and 1968, by 1968 conversion activity had almost ceased, as apartment redevelopment became the dominant form of functional change in all areas.

Converted Dwellings with Other Suites

Other multiple-family converted dwellings (for example rooming and boarding houses) are present in only a few study areas (Areas 3, 4, 5 and 6; Table 6), and are most common in long established neighbourhoods which are close to the central business district and the Strathcona business centre. The temporal sequence that characterizes basement conversions (increase—stabilization—decline) also applies to this residential type (Figure 6), although the dimensions of change are less and several areas deviate slightly from the general pattern.

Between 1953 and 1958, the total lot area of other converted dwellings expanded by 17 per cent, while the number of dwellings increased from 40 to 49 (Tables 7 and 8). These increases were evenly distributed among all areas. During the stabilization period, 1958 – 1963, there was very little change anywhere, and the 7 per cent share of the land use structure was maintained. Then, in the period following 1963, there was a general decline in lot area and dwelling numbers, though not uniformly in all areas. A reversal of the downward trend occurred in Areas 5 and 6, and was probably due to the

increased demand for rental accommodation in the campus fringe by students of the University of Alberta. These areas acquired two and five additional dwellings respectively (Appendix C, Tables 5 and 6). However, losses of seven and nine multi-family units in Areas 3 and 4 balanced these gains, and account for the overall decrease in lot area of 21 per cent during this period (Table 8).

Walk-Up and High Rise Apartments

During the study period, apartments recorded the most significant amounts and the highest rates of functional change in each study area. This is clearly revealed by the following figures. Between 1953 and 1968, the number of walk-up apartments increased from two to 81, while their lot area increased by 2440 per cent (Tables 7 and 8). High rises, which are found only in Area 4, totalled five in 1968, whereas only one existed in 1963. And, as a proportionate share of the land use structure, apartment land use rose from almost nil in all areas in 1953 to as high as 45 per cent in Areas 3 and 4 in 1968 (Figure 6). Furthermore, apartment developments were responsible for the addition of approximately 2,000 dwelling units to the housing inventory of the study areas.

These increments are further substantiated by the sharp increase in the assessed value of apartment lots and buildings in relation to other land use types (Figures 7 and 8). While the assessed value of apartment lots rose from \$10,000 to \$90,000 between 1953 and 1968, the assessed value of apartment buildings increased from \$50,000 to \$4,600,000.

In each study area, apartment redevelopment was most intensive between 1963 and 1968. Between 1958 and 1963, however, seven apartments

were built in Area 3 and five in Area 4, largely reflecting the close proximity of these areas to the central business district, near which apartment redevelopment in Edmonton first occurred. With the rising demand for rental accommodation in other parts of the city after 1963, apartments began to locate in the other study areas. In less than five years, twelve walk-up apartments were constructed in Area 2, eight in Area 5, ten in Area 6 and sixteen in Area 7 (Appendix C, Tables 1 - 7). By 1968, therefore, apartments were a very prominent feature of the land use pattern of each study area.

Other Residential Types

The trends of two other residential types—multi-family dwellings such as duplexes, triplexes and quadruplexes, and commercial-residential buildings—have not been graphed because they constitute only a small portion of the residential land use structure. The occupied lot area and number of both types, however, has increased during the study period (Tables 7 and 8).

In Areas 1, 2, 3, 5 and 6, where duplexes, triplexes and quadruplexes exist, these dwellings have generally preceded apartment redevelopment. Usually they have replaced very obsolete structures or have located on vacant land.

The combined commercial-residential function is most typically a retail outlet with a residence either above or attached behind. It is found on those commercial arterials which run through Areas 1, 3, 4, 5, 6 and 7 (Appendix C, Tables 1 - 7). During the study period, this type of residential function increased in number from thirteen to fifteen, particularly in Area 5, where it

spread along the established commercial strip, Whyte Avenue.

As illustrated by the seven study areas, conversion and redevelopment activities have had a significant impact on the temporal patterns of land use change. For example, prior to the period of intensive apartment construction, single-family houses were declining in number, primarily as the result of dwelling conversion. With the location of apartments in the study areas, the trend of single-family decline was greatly accelerated, while the increase of converted dwellings, associated with the early phases of the transition process, was arrested and ceased almost entirely. Thus, during the transition process, conversion activity characterizes the early stages of functional change and apartment redevelopment the later stages.

LAND USE SUCCESSION IN TRANSITION AREAS

The amounts and rates of land use change indicate the varying relation of each land use type to the total land use structure, but dimensions of land use succession are also important aspects of the residential transition process. What types of activities succeed other land uses? What are the most frequent types of succession? Are there distinct patterns of succession through time and space? And is there, as ecological theory suggests, a systematic cycle of change in the use of a particular parcel of land?

The Nature of Land Use Succession

The term succession was initially developed and used by plant and animal ecologists. In the 1920s, though, it was adopted by Park and fellow

sociologists at the University of Chicago to refer to the sequential occupance of a neighbourhood by different social groups or land use activities.¹ According to urban ecological theory, social succession is the invasion and occupation of a residential area by a new group of people and the reciprocal withdrawal of the previous population. Land use succession, on the other hand, refers to the change in use of land from one function to another.

Despite many studies which have analyzed land use succession patterns, "the concept of a succession of land uses focussing on the changes in occupancy of a given site in developed areas of the city is not well formulated."² In particular, there is no distinction made between use of land and use of buildings.³ Because buildings provide the permissive space for activities, reference to structures has been implicit in land use theory. In an attempt to balance both elements, Fisher and Fisher have suggested a theoretical sequence of land use succession on a given site which incorporates both functional and structural changes.⁴

If applied specifically to residential areas, this theory comprises

¹For a discussion of urban ecological theory see: L. Reissman, The Urban Process, New York, The Free Press, 1964, pp. 122-150.

²L. S. Bourne, Private Redevelopment of the Central City, Research Paper No. 112, Department of Geography, University of Chicago, 1967, p. 24.

³Bourne notes this fact and suggests the need for a "...structure-land-activity theory of urban change." Ibid., p. 40.

⁴E. M. Fisher and R. M. Fisher, Urban Real Estate, New York, Henry Holt and Company, 1954, p. 339.

two stages. The first stage is exemplified by the conversion of a single-family house to a multiple-family dwelling. Because one form of residential activity is succeeded by a different type, functional as well as structural change occurs. The second phase involves the demolition or removal of a converted dwelling and its replacement by another residential activity, most typically by a higher density use such as an apartment. This theoretical sequence of site development—single-family construction, dwelling conversion and redevelopment—will be examined later to determine whether there is a definite cycle of change in the use of a particular parcel of land.

Measurement of Land Use Succession

In assessing the dimensions of land use succession, and in answering the questions posed at the beginning of this section, it is necessary to compare individual properties at specific time intervals. For each study area, therefore, tables were prepared showing the properties of each land use type that underwent change between 1953 - 1958, 1958 - 1963 and 1963 - 1968.⁵ Each property was examined and its use at the beginning and the end of each particular period recorded. This was repeated for nearly 800 properties, thus achieving a comprehensive picture of land use succession through time.

The results for all areas are summarized in Table 9 and for individual areas in Appendix E, Tables 1 - 7. These tables can be interpreted in

⁵Only numbers of properties have been listed in these tables. The square footage of different land use types would show essentially the same results.

TABLE 9 — LAND USE SUCCESSION MATRIX, FOR ALL AREAS, 1953-1968

	1958 Land Use									Total	No	Total
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Changes	Change	Props
1953 Land Use												
Single-family	-	60	13	2	4	-	1	-	25	105	480	585
Basement conversions	10	-	1	-	-	-	-	-	2	13	63	76
Other conversions	2	-	-	-	1	-	-	-	-	3	37	40
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	2	2
Apartments	-	-	-	-	-	-	-	-	1	1	3	4
Commercial-residential	-	-	-	-	-	-	-	-	-	-	13	13
Vacant land	2	1	-	5	-	-	-	-	13	21	11	32
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	1	-	-	-	1	43	44
Total	14	61	14	7	5	1	1	-	43	144	652	796
1963 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total
										Changes	Change	Props
1958 Land Use												
Single-family	-	26	6	3	19	-	-	1	2	57	448	505
Basement conversions	12	-	-	2	3	-	-	-	-	17	106	123
Other conversions	-	2	-	-	1	-	-	-	-	3	46	49
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	8	8
Apartments	-	-	-	-	-	-	-	-	-	-	8	8
Commercial-residential	-	-	-	-	-	-	-	-	-	-	14	14
Vacant land	-	-	-	-	1	-	-	-	1	2	16	18
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	1	-	-	-	1	48	49
Total	12	28	6	5	24	1	-	1	3	80	694	774
1968 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total
										Changes	Change	Props
1963 Land Use												
Single-family	-	6	1	5	111	-	1	3	7	134	327	461
Basement conversions	9	-	9	1	21	-	-	-	2	42	90	132
Other conversions	-	-	-	-	13	-	1	-	6	20	31	51
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	15	15
Apartments	-	-	-	-	-	-	-	-	-	-	25	25
Commercial-residential	-	-	-	-	-	-	-	-	-	-	15	15
Vacant land	-	-	-	-	6	-	-	-	-	6	5	11
Vacant buildings	-	-	-	-	1	-	-	-	-	1	1	1
Non-residential	-	-	-	-	1	-	-	-	-	1	48	49
Total	9	6	10	6	153	-	2	3	15	204	556	760

Source: Assessors Department, City of Edmonton, 1968.

the following manner, using the period 1963 - 1968 in Table 9 as an example. Across each row, the number of cases in which a particular land use type changed to other residential uses is given. Row 1, for example, shows that of 134 single-family properties involved in succession, eight changed to basement suites, one to other converted dwellings, five to duplexes and 111 to apartments. Similarly, reading down each column, the predecessors of the new land use types are listed. Column 5, for example, indicates that of 153 properties redeveloped by apartments, 111 were previously single-family homes, 21 were basement suites and thirteen were other converted dwellings.

Another dimension is added by comparing the number of properties in a particular cell to the total number of properties involved in succession. For example, of 204 properties involved in change between 1963 and 1968, 111 or over 50 per cent were single-family houses succeeded by apartments. These tables also show those properties which did not change status during a period. For instance, of a total of 461 single-family properties, 327 or nearly 80 per cent remained unchanged in the period 1963 - 1968. This particular dimension allows comparison of the ratios of each land use type involved in succession.

Types of Land Use Succession

The major types of land use succession that characterize residential areas in transition are therefore shown in Table 9. Excluding changes involving non-residential uses, the most important can be classified as redevelopment, conversion and reconversion. Reconversion occurs when a multiple-family dwelling reverts to single-family status. Conversion involves the change

in status of single-family residences to multiple-family dwellings with either basement or other suites. Basement conversions can be further altered to become converted dwellings with other suites. Redevelopment is exemplified by the replacement of single-family and multiple-family dwellings by duplexes, triplexes, quadruplexes or apartments. Development of vacant land by multiple-family dwellings also occurs.

Temporal Patterns of Land Use Succession

These various types of land use succession have distinct temporal patterns which confirm and amplify the trends shown by the different residential types. During the initial stages of transition before 1958, it was shown that the number of single-family houses declined, while converted dwellings increased. Indeed, of the 101 properties in all areas involved in residential succession (excluding changes to non-residential functions), approximately 75 per cent were single-family houses being converted to multiple-family residences (Table 9). This pattern is characteristic of each study area (Appendix E, Tables 1 - 7). Redevelopment, mainly in the form of quadruplexes, was minimal at this time, accounting for less than 7 per cent of all residential succession. The remaining land use changes were balanced between reconversions and the development of vacant land.

The stabilization pattern, which characterized the amounts and rates of change of several land use types between 1958 and 1963, is confirmed when the land use succession matrices for each area in this period are examined (Appendix E, Tables 1 - 7). Single-family residences declined only moderately

in number and conversion activity decreased in importance. Whereas 17 per cent or 105 of 585 single-family houses changed status between 1953 and 1958, only 10 per cent or 57 of 505 single-family properties were involved in change between 1958 and 1963 (Table 9). Similarly, new conversions declined from a previous total of 73 to only 32 during this stabilization period. Residential redevelopment, which was not subject to the stabilization trend, increased in importance from 7 per cent to over 35 per cent of all land use changes, but this activity was restricted mainly to Areas 3 and 4 (Appendix E, Tables 3 and 4).

In the period of intensive apartment redevelopment between 1963 and 1968, over 80 per cent of all residential land use changes involved properties changing to apartments. Conversion activity diminished considerably, and accounted for less than 10 per cent of all changes. Although most redeveloped properties were single-family houses, more basement and other converted dwellings were replaced than before. Conversions accounted for about 25 per cent of all replaced properties, compared to less than 10 per cent in previous periods. In fact, the replacement ratio of converted dwellings was higher than the ratio for single-family houses. Twenty or 40 per cent of 51 converted dwellings with other suites and 42 or 35 per cent of 132 basement conversions were replaced (Table 9). This compares to the replacement ratio of 30 per cent for single-family houses.

As shown by this discussion of land use succession characteristics, three distinct phases mark the transition process. During the first stage, conver-

sion of single-family to multiple-family dwellings predominates. This is followed by a period of limited conversion and redevelopment activity. The third stage is characterized by extensive apartment redevelopment, and conversion activity, dominant in the first stage, ceases almost entirely. These phases in the development of a residential transition area are clearly illustrated in Table 10, which summarizes the data presented in the land use succession matrices.

Land Use Succession and Site Development

Evidence shown in Table 11 does not support Fisher and Fisher's thesis that there is a definite sequence of single-family development, dwelling conversion and then redevelopment on a parcel of land. Rather, most redevel-

TABLE 11 — LAND USE SUCCESSION AND SITE DEVELOPMENT,
FOR ALL AREAS, 1953-1968

Type of Replaced Dwelling	Number	Per Cent
Single-family	186	80.5
Converted	45	19.5
Total	231	100.0

Source: Assessors Department, City of Edmonton, 1968.

oped properties—to the extent of 80 per cent—were single-family residences. Why should this sequence not occur? Demands for apartment accommodation

TABLE 10 — PERIODS OF CHANGE AND MAJOR LAND USE SUCCESSION CHARACTERISTICS

Period and Land Use Succession Characteristics	Study Areas						
	1	2	3	4	5	6	7
1953-1958							
Single-family to basement conversion	lim ¹	lim	yes ²	lim	yes	yes	yes
Single-family to other conversion	no ³	no	yes	yes	lim	lim	no
Redevelopment by du, tri, quadruplexes	no	no	lim	no	no	no	no
Redevelopment by apartments	no	no	lim	lim	no	no	lim
Reconversion	yes	no	lim	yes	no	no	yes
1958-1963							
Single-family to basement conversion	yes	lim	yes	no	lim	yes	yes
Single-family to other conversion	no	no	lim	yes	no	lim	lim
Redevelopment by du, tri, quadruplexes	lim	no	yes	no	no	lim	no
Redevelopment by apartments	no	no	yes	yes	no	yes	yes
Reconversion	yes	no	lim	no	yes	lim	yes
1963-1968							
Single-family to basement conversion	lim	lim	no	no	lim	lim	lim
Single-family to other conversion	no	no	no	lim	no	no	no
Redevelopment by du, tri, quadruplexes	lim	yes	no	no	lim	no	no
Redevelopment by apartments	yes	yes	yes	yes	yes	yes	yes
Reconversion	no	no	lim	no	yes	lim	yes

¹Between zero and two changes. ²More than two changes. ³No changes.
Source: Assessors Department, City of Edmonton, 1968.

in specific locations in the city may mean that housing built only recently is replaced before conversion has had a chance to occur. Many houses, too, are not suitable for structural modification and thus the conversion stage is bypassed. And also, because a converted dwelling represents an income to its owner, this person may be more reluctant to sell his house than the owner of a single-family residence.⁶

SPATIAL PATTERNS OF LAND USE CHANGE

Reflecting the amounts and rates of functional change and land use succession, Figures 9 - 15 illustrate distinct spatial patterns associated with the transition process. In particular, these maps show the impact of a major arterial on a transition area, the development of clusters of apartments or converted dwellings, the occurrence of isolated apartments or converted dwellings, and the resistance to change of groups of single-family houses.

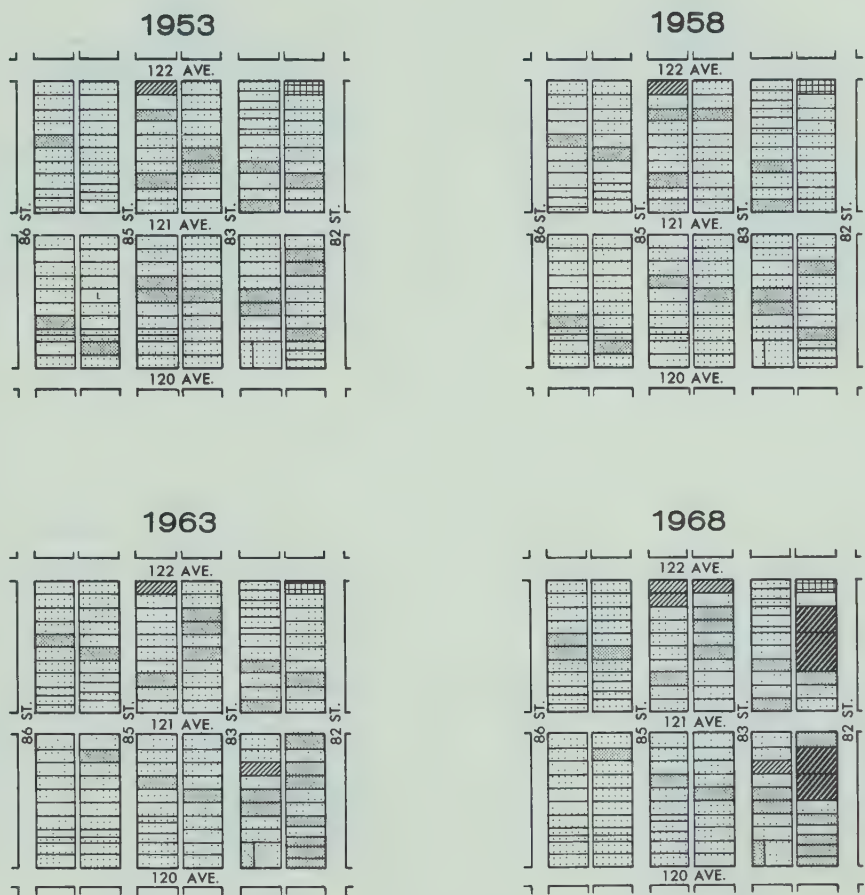
In Area 1, for example, there is evidence of conversion and redevelopment activities diminishing in intensity as the distance from a major thoroughfare increases (Figure 9). Houses close to 82 Street in Area 1 have had a high turnover of owners, primarily because the noise of this arterial has forced people to move.⁷ Some new owners of these houses chose to convert their newly

⁶This reason was obtained from interviews with several owners of converted dwellings.

⁷The reasons for the formation of the spatial patterns discussed in this section were determined from assessment records, questionnaires and interviews during the course of field work.

Figure 9

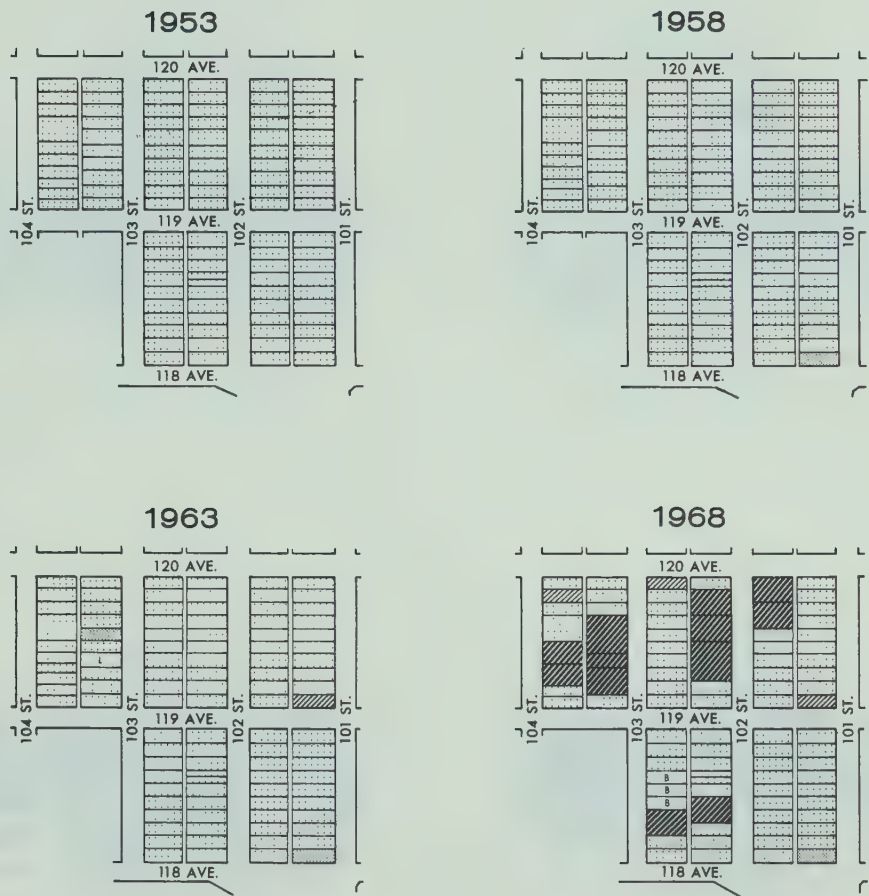
LAND USE CHANGES AREA 1



LAND USE CATEGORIES

	Single-Family Residences		Walk-Up Apartments
	Converted Dwellings with Basement Suites		High Rise Apartments
	Converted Dwellings with Other Suites		Residential and Commercial
	Duplexes, Triplexes and Quadruplexes		Vacant Land (L) or Building (B)
			Non-Residential

LAND USE CHANGES AREA 2



LAND USE CATEGORIES

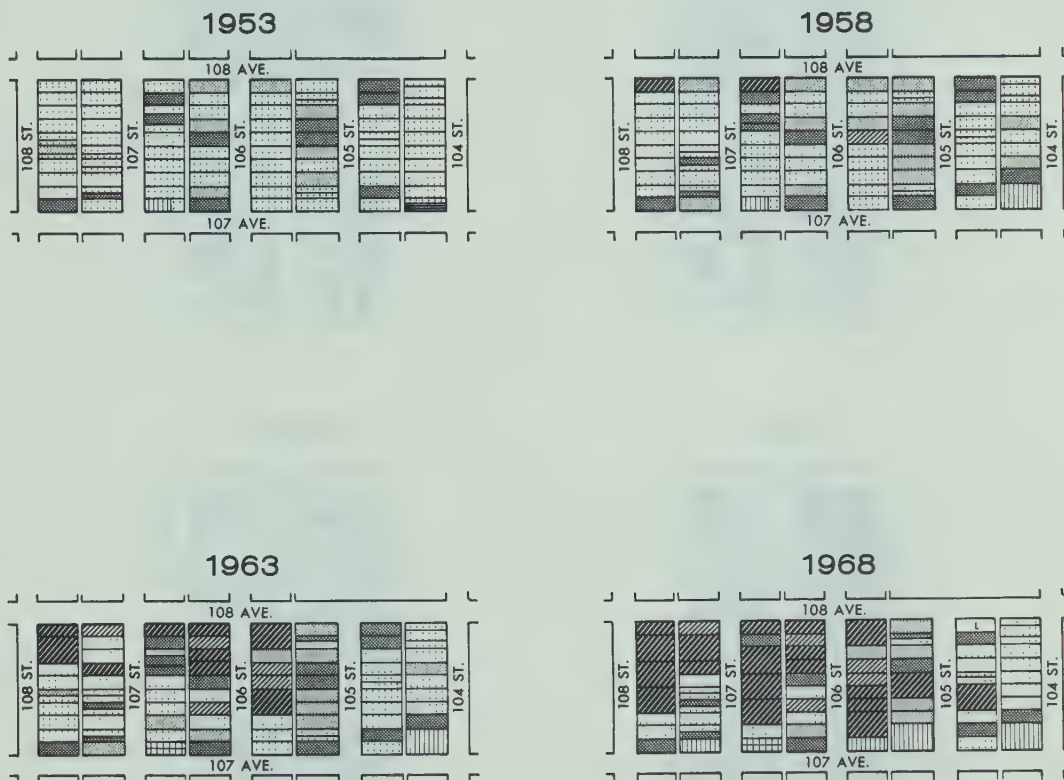
	Single-Family Residences		Walk-Up Apartments
	Converted Dwellings with Basement Suites		High Rise Apartments
	Converted Dwellings with Other Suites		Residential and Commercial
	Duplexes, Triplexes and Quadruplexes		Vacant Land (L) or Building (B)
			Non-Residential

L.M.

0 Feet 600

Source: Assessors Department,
City of Edmonton,
1968

LAND USE CHANGES AREA 3



LAND USE CATEGORIES

	Single-Family Residences		Walk-Up Apartments
	Converted Dwellings with Basement Suites		High Rise Apartments
	Converted Dwellings with Other Suites		Residential and Commercial
	Duplexes, Triplexes and Quadplexes		Vacant Land (L) or Building (B)
			Non-Residential

L.M.

0 Feet 600

Source: Assessors Department,
City of Edmonton,
1968

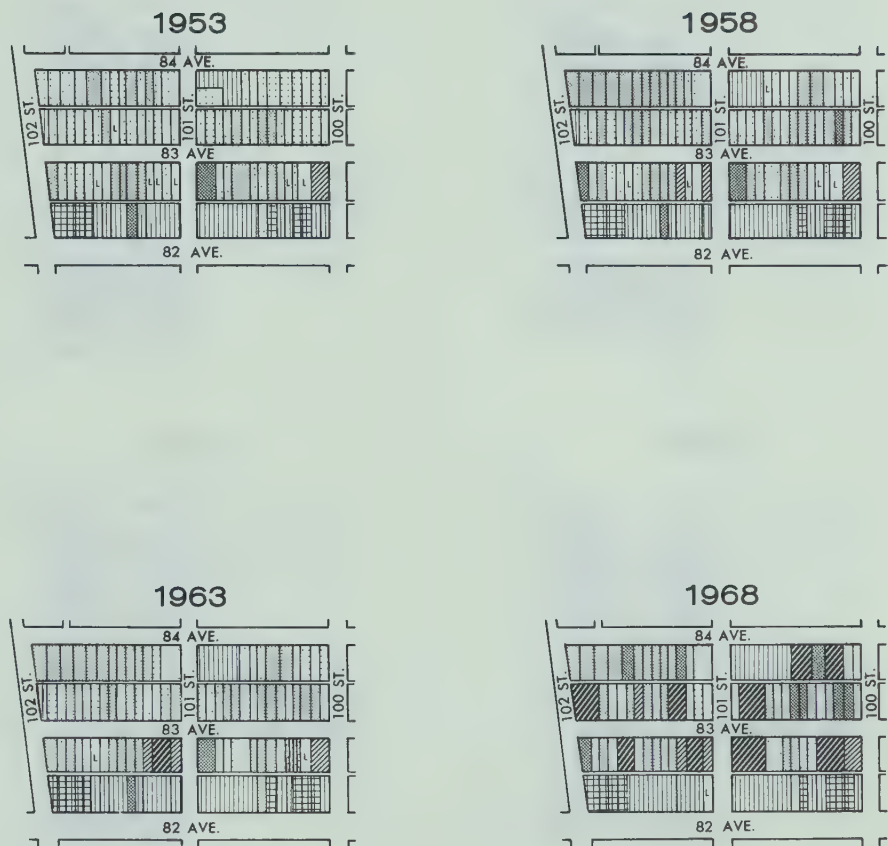
LAND USE CHANGES AREA 4



LAND USE CATEGORIES

	Single-Family Residences		Walk-Up Apartments
	Converted Dwellings with Basement Suites		High Rise Apartments
	Converted Dwellings with Other Suites		Residential and Commercial
	Duplexes, Triplexes and Quadruplexes		Vacant Land (L) or Building (B)
			Non-Residential

LAND USE CHANGES AREA 5



LAND USE CATEGORIES

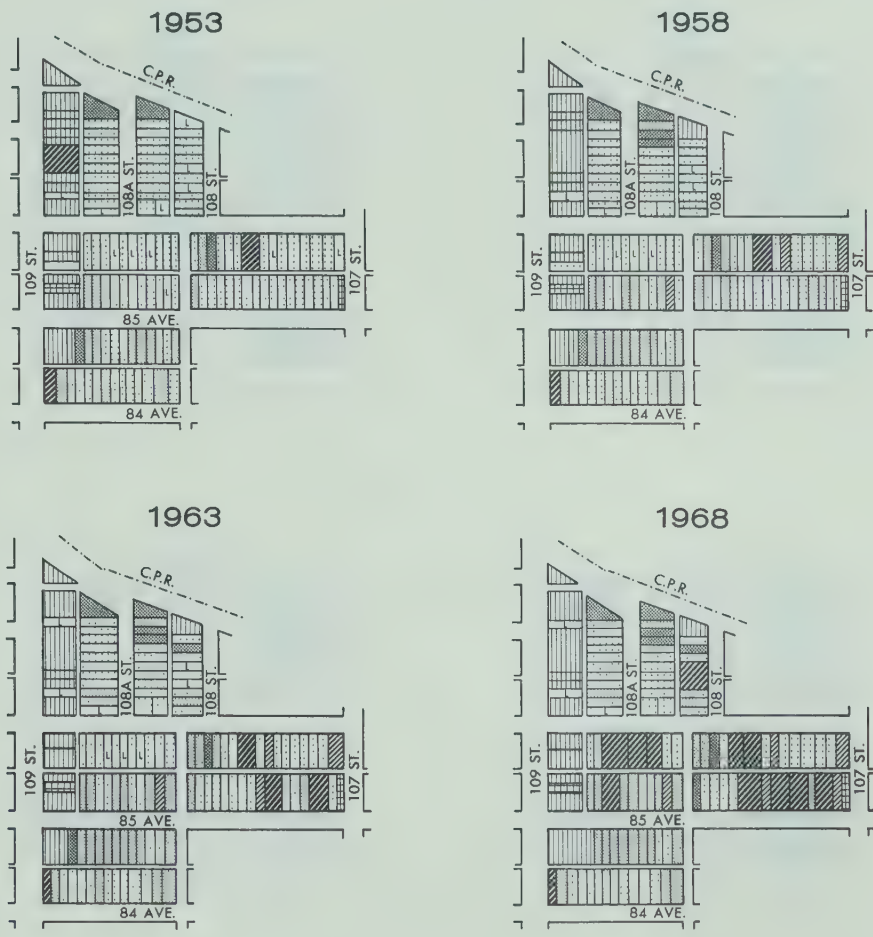
- | | |
|--|---|
|  Single-Family Residences |  Walk-Up Apartments |
|  Converted Dwellings with Basement Suites |  High Rise Apartments |
|  Converted Dwellings with Other Suites |  Residential and Commercial |
|  Duplexes, Triplexes and Quadplexes |  Vacant Land (L) or Building (B) |
| |  Non-Residential |

L.M.

0 Feet 600

Source: Assessors Department,
City of Edmonton,
1968

LAND USE CHANGES AREA 6



LAND USE CATEGORIES

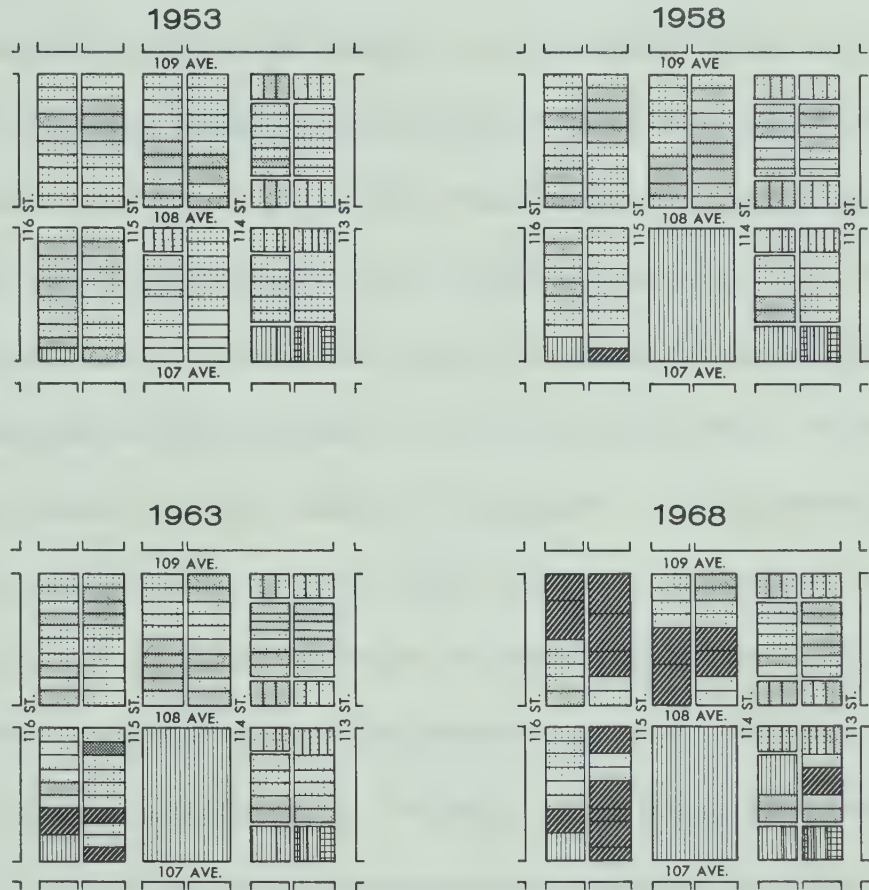
- | | |
|--|---|
|  Single-Family Residences |  Walk-Up Apartments |
|  Converted Dwellings with Basement Suites |  High Rise Apartments |
|  Converted Dwellings with Other Suites |  Residential and Commercial |
|  Duplexes, Triplexes and Quadruplexes |  Vacant Land (L) or Building (B) |
| |  Non-Residential |

L.M.

0 Feet 600

Source: Assessors Department,
City of Edmonton,
1968

LAND USE CHANGES AREA 7



LAND USE CATEGORIES

	Single-Family Residences		Walk-Up Apartments
	Converted Dwellings with Basement Suites		High Rise Apartments
	Converted Dwellings with Other Suites		Residential and Commercial
	Duplexes, Triplexes and Quadruplexes		Vacant Land (L) or Building (B)
			Non-Residential

L.M.

0 Feet 600

Source: Assessors Department,
City of Edmonton,
1968

purchased dwellings and to reside elsewhere. A major arterial, therefore, may influence the formation of a particular spatial pattern and hasten the formation of transition areas.

When redevelopment or conversion takes place, groups of properties comprising a portion of a block, or even an entire block, can be changed within close sequence of each other. Three areas illustrate this pattern: Area 5 on 84 Avenue (Figure 13), Area 6 along 85 Avenue (Figure 14) and Area 7 on 115 Street (Figure 15). One of the reasons for this all-encompassing change can be determined in Area 6. A group of houses, all built in 1908, characterized the north side of this portion of 85 Avenue. As the result of being in poorer structural condition, the properties of these houses were all sought for redevelopment. In Area 7 along 115 Street, homeowners, who feared the encroachment of several apartments into their neighbourhood, sold their houses within a few months of the rest of their neighbours. A block of land was thus available for redevelopment. Similarly, vacant lots are sometimes found together in a block, and serve as the nucleus of development projects, as they have in Area 5.

In contrast, local residents may refuse to sell or convert their properties. Evidence of resistance to change can be seen in most areas where a cluster of single-family houses remains or where a house is left isolated between two apartment developments. Often the people who refuse to sell have lived in a neighbourhood for many years and have a deep attachment for their immediate environment. An excellent example of the persistence of owner-occupiers,

despite repeated offers from developers to purchase their houses, is shown in Area 2 along 101 Street (Figure 10). Should one owner in this block decide to sell, however, many others would probably follow his example, and this resistance pattern would be broken down.

Examples of isolated conversion activity or apartment construction can often be explained by the initial settlement pattern of a neighbourhood. Scattered single-family housing development took place in each study area prior to the area being settled as a whole. Because of the age, condition and type of housing, these properties frequently lend themselves to being either converted or redeveloped.

SUMMARY

Through time, transition areas are marked by considerable changes in their functional make-up. Once dominated by single-family residences, they become, in turn, areas of dwelling conversion and apartment redevelopment. In the initial phases of transition, dwelling conversion is quite active in the form of multi-family dwellings succeeding single-family residences. Following this phase, a stabilization period occurs, as conversion activity diminishes in intensity and some properties, primarily single-family residences, are replaced by low density forms of redevelopment (such as duplexes) and some apartments. In the last phase, dwelling conversion and low density redevelopment cease almost entirely, while walk-up and high rise apartments dominate functional change. At the peak of this redevelopment, apartments succeed both single-family and

converted dwellings. As the result of functional change, distinct spatial patterns of dwelling conversion, apartment redevelopment and resistance to change can be determined.

Chapter IV

STRUCTURAL CHANGE IN TRANSITION AREAS: CONVERSION ACTIVITY

INTRODUCTION

Conversion of single-family houses to higher density, multiple-family residences occurs in every large Canadian and American city.¹ Such activity is most common in older neighbourhoods near the central business district of a city, but is becoming more prevalent in suburban areas as these districts age. Selected aspects of the conversion process are examined in this chapter, noting the characteristics that distinguish converted dwellings from single-family houses. In particular, distinctions are made between types and ages of houses. Because the study areas are located near the central business district and several miles away from it in newer housing areas, significant spatial differences are noted.

TYPES OF CONVERTED DWELLINGS

The term conversion, as used throughout this study and defined in the introductory chapter, refers to the structural modification of a single-family

¹ See for example: W. A. V. Clark, The Dynamics of Rental Housing Areas in the United States Central Cities, Unpublished Ph.D. dissertation, University of Illinois, Urbana, 1964, 134 pp.; and R. J. Fuchs, "Intraurban Variations of Residential Quality," Economic Geography, vol. 36 (October 1960), pp. 313-325.

home to include, in addition to the main residence, one or more dwelling units. This change could involve the addition of a suite of several rooms or simply the inclusion of extra cooking or washroom facilities to accommodate boarders. The City Assessors Department records two major types of converted dwellings—houses with basement suites and houses with other suites (Plates 1 and 2). Converted dwellings with other suites include boarding and rooming houses and dwellings with an upstairs suite.

DISTRIBUTION OF CONVERTED DWELLINGS

According to a report of the City of Edmonton Planning Department, "in Edmonton as in other cities there is no single area where... (converted) dwellings group together."² However, in a city-wide context, the distribution of converted dwellings coincides quite closely with that part of the city which was built-up by 1945 (see Figure 3, p. 20). The heaviest concentrations are found just south, west and northeast of the central business district and near the Strathcona business centre. Conversion activity diminishes in intensity from these centres, and as distance increases from these points, the type of conversion changes, as basement suites become more prevalent in suburban areas.

Areas 3 and 4, which are located closest to the central business

²City of Edmonton, Planning Department, Draft General Plan for the City of Edmonton, Part III, Land Uses, Generalized Land Use Plans, vol. 1, 1963, p. 7.



Plate 1. Converted Dwelling with a Basement Suite



Plate 2. Converted Dwelling with Other Suites

TABLE 12 — DISTRIBUTION OF CONVERTED DWELLINGS,
BY STUDY AREA, 1968

Study Areas	Basement Conversions		Other Conversions	
	Number	Per Cent of Total Lot Area	Number	Per Cent of Total Lot Area
1	21	16.6	-	-
2	1	.9	-	-
3	6	6.1	11	12.8
4	4	4.1	16	19.2
5	22	23.8	8	9.8
6	24	20.8	7	6.7
7	18	16.4	-	-
All areas	96	12.3	42	6.0

Source: Assessors Department, City of Edmonton, 1968.

district, have the greatest number of large, two storey converted dwellings with other suites (Table 12). On the other hand, in Areas 1, 2 and 7, which are farther from the central business district and situated in newer settings, only basement conversions are found. Areas 5 and 6 are anomalies, primarily because they contain both old and new housing. Basement conversions in these areas are associated with newer house types built since 1940, whereas other conversions are related to house types that precede this date. The few basement suites found in Areas 3 and 4 can also be explained by this fact.

CHARACTERISTICS OF CONVERTED DWELLINGS

House Types

Whether conversion will take place, and what types of conversion will occur, largely depends on house type. A large, two storey structure, for example, can easily be adapted to include extra living quarters, but a small structure is unlikely to be modified. Table 13 lists the house types found in the study areas, comparing converted and single-family dwellings. Cottages, bungalows and one-and-a-half, one-and-three-quarter and two storey dwellings are located in the study areas. Two other house types listed by the City Assessors Department, shacks and split-level dwellings, are not found in any area. With respect to the terms old and modern which are used in Table 13, old house types are those built generally before 1940 and modern house types are those constructed after this date.

Several important conclusions can be drawn from the data presented in Table 13. Most significantly, different types of conversion activity are associated with specific house types. Basement conversions are affiliated with bungalows, cottages and one-and-a-half storey dwellings,³ the house types which are characteristic of newer areas (Areas 1, 2 and 7). Of the total of 96 basement conversions for all study areas, 46 per cent are bungalows, 22 per cent are cottages and 17 per cent are one-and-a-half storey houses (Table 13).

³A one-and-a-half storey dwelling is very similar in appearance to a bungalow; its upstairs is usually limited to only one or two small bedrooms.

TABLE 13 — HOUSE TYPES OF SINGLE-FAMILY AND
CONVERTED DWELLINGS, FOR ALL AREAS, 1968

House Type	Single- Family		Basement Conversions		Other Conversions		All Types	
	No.	%	No.	%	No.	%	No.	%
Cottage								
Modern	56	16.5	19	19.8	-	-	75	15.7
Old	41	12.1	2	2.1	-	-	43	9.0
	97	28.6	21	21.9	-	-	118	24.7
Bungalow								
Modern	75	22.1	44	45.8	2	4.8	121	25.4
Old	18	5.3	-	-	-	-	18	3.8
	93	27.4	44	45.8	2	4.8	139	29.2
One-and-a-half storey								
Modern	62	18.3	12	12.8	4	9.5	78	16.4
Old	19	5.6	4	4.2	1	2.4	24	5.0
	81	23.9	16	17.0	5	11.9	102	21.4
One-and-three quarter storey								
Modern	-	-	-	-	-	-	-	-
Old	23	6.8	5	5.2	4	9.5	32	6.7
	23	6.8	5	5.2	4	9.5	32	6.7
Two storey								
Modern	6	1.8	3	3.1	2	4.8	11	2.3
Old	39	11.5	7	7.3	29	69.0	75	15.7
	45	13.3	10	10.4	31	73.8	86	18.0
All types	339	100.0	96	100.0	42	100.0	477	100.0

Source: Assessors Department, City of Edmonton, 1968.

A sizeable majority of these house types, however, have not been converted and remain as single-family residences. Table 14, which lists the land use status of dwellings by their house type, clearly illustrates this fact. Eighty-two per cent of all cottages, 80 per cent of all one-and-a-half storey houses and 67 per cent of all bungalows have not been physically altered (Table 14). Many cottages and bungalows have only very small basements or no basements at all, and thus are unsuitable for conversion.

Converted houses with other suites are associated primarily with large, old style, two storey structures. Many of these dwellings were built before 1930 and therefore are typical of long established districts of the city (Areas 3 and 4). Thirty-one or 73 per cent of other conversions are, in fact, two storey structures. The remaining 27 per cent are one-and-a-half storey (12 per cent), one-and-three-quarter storey (10 per cent) and bungalow (5 per cent) style dwellings (Table 13).

A higher ratio of two storey houses, compared to other house types, have been converted. Whereas less than 20 per cent of all cottages, for example, have been structurally modified, almost 50 per cent of all two storey dwellings have been converted (Table 14). In contrast, very few one-and-three-quarter storey dwellings have had physical alterations, even though all of these houses were built before 1940. This particular house type is often situated on small lots, and consequently, its floor space is limited and it is unsuitable for conversion.

Condition of Converted Dwellings

Housing condition, based primarily on the exterior appearance

TABLE 14 — LAND USE STATUS OF DWELLINGS BY HOUSE TYPE, FOR ALL AREAS, 1968

Land Use Type	Cottage		Bungalow		One-and-a-half storey		One-and-three-quarter storey		Two Storey	
	No.	%	No.	%	No.	%	No.	%	No.	%
Single-family	97	82.2	93	66.9	81	79.4	23	71.9	45	52.3
Basement conversions	21	17.8	44	31.7	16	15.7	5	15.6	10	11.6
Other conversions	-	-	2	1.4	5	4.9	4	12.5	31	36.1
Total	118	100.0	139	100.0	102	100.0	32	100.0	86	100.0

Source: Assessors Department, City of Edmonton, 1968.

of a house, is measured by the quality and upkeep of a dwelling. In this study, it was important to know housing conditions for two reasons. First, to determine if transition areas coincide with districts of distinct housing quality; and second, to determine if conversion activity is associated with poorer housing conditions. Because building assessment cards do not indicate the present condition of a house, a windshield survey was undertaken. Five types of housing condition were identified.⁴

1. Good condition—buildings are in sound structural condition, not necessarily the most modern, but nevertheless free from any form of deterioration.

2. Fair to good condition—buildings are in sound structural condition, but are in need of a small minor repair such as painting.

3. Fair condition—buildings are in fairly sound structural condition, but were of only fair initial construction quality. Minor repairs are necessary.

4. Poor to fair condition—buildings have fairly serious structural deficiencies, but major repairs such as new steps, roofing or siding are economically feasible.

5. Poor condition—buildings are structurally obsolete and display serious structural deficiencies such as caved-in verandas or roofing that make major repairs uneconomical.

The results of the windshield survey are summarized in Table 15, which categorizes the housing conditions of single-family and converted dwellings

⁴This classification scheme was adapted and modified from: City of Edmonton, Planning Department, A Study of the City of Edmonton, 1964, pp. 2-4.

TABLE 15 — HOUSING CONDITIONS OF SINGLE-FAMILY
AND CONVERTED DWELLINGS, BY STUDY AREA, 1968

Housing Condition	Single- Family		Basement Conversions		Other Conversions		All Types	
	No.	%	No.	%	No.	%	No.	%
ALL AREAS								
Good	38	11.2	9	9.4	9	21.4	56	11.9
Fair to good	102	30.1	36	37.4	13	30.9	151	31.6
Fair	149	43.9	44	45.9	15	35.7	208	43.7
Poor to fair	46	13.5	7	7.3	5	12.0	58	11.9
Poor	4	1.3	-	-	-	-	4	.9
Total	339	100.0	96	100.0	42	100.0	477	100.0
AREA 1								
Good	17	18.3	4	19.1	-	-	21	17.5
Fair to good	25	26.9	9	42.9	-	-	34	26.0
Fair	34	36.6	6	28.5	-	-	40	31.6
Poor to fair	14	15.0	2	10.5	-	-	16	12.7
Poor	3	3.2	-	-	-	-	3	2.2
Total	93	100.0	21	100.0	-	-	114	100.0
AREA 2								
Good	2	3.0	-	-	-	-	2	2.9
Fair to good	12	17.4	1	100.0	-	-	13	18.7
Fair	44	63.6	-	-	-	-	44	62.9
Poor to fair	11	16.0	-	-	-	-	11	15.5
Poor	-	-	-	-	-	-	-	-
Total	69	100.0	1	100.0	-	-	70	100.0
AREA 3								
Good	-	-	2	33.3	-	-	2	4.7
Fair to good	7	26.9	3	50.0	4	36.3	14	32.5
Fair	12	46.2	1	16.7	4	36.3	17	39.5
Poor to fair	7	26.9	-	-	3	27.4	10	23.3
Poor	-	-	-	-	-	-	-	-
Total	26	100.0	6	100.0	11	100.0	43	100.0

TABLE 15 — CONTINUED

Housing Condition	Single- Family		Basement Conversions		Other Conversions		All Types	
	No.	%	No.	%	No.	%	No.	%
AREA 4								
Good	3	9.4	1	25.0	8	50.0	12	23.0
Fair to good	8	25.0	-	-	6	37.5	14	26.1
Fair	15	46.8	1	25.0	2	12.5	18	35.6
Poor to fair	5	15.7	2	50.0	-	-	7	13.4
Poor	1	3.1	-	-	-	-	1	1.9
Total	32	100.0	4	100.0	16	100.0	52	100.0
AREA 5								
Good	2	8.7	-	-	1	12.5	3	5.2
Fair to good	8	34.8	9	40.9	2	25.0	19	35.8
Fair	11	47.8	11	50.0	4	50.0	26	49.6
Poor to fair	2	8.7	2	9.1	1	12.5	5	9.4
Poor	-	-	-	-	-	-	-	-
Total	23	100.0	22	100.0	8	100.0	53	100.0
AREA 6								
Good	7	14.3	1	4.1	-	-	8	10.0
Fair to good	20	40.8	6	25.0	1	14.3	27	35.0
Fair	17	34.7	16	66.7	5	71.4	38	47.5
Poor to fair	5	10.2	1	4.2	1	14.3	7	8.5
Poor	-	-	-	-	-	-	-	-
Total	49	100.0	24	100.0	7	100.0	80	100.0
AREA 7								
Good	7	14.9	2	11.2	-	-	9	13.8
Fair to good	22	46.9	9	50.0	-	-	31	47.7
Fair	16	34.0	7	38.8	-	-	23	35.4
Poor to fair	2	4.2	-	-	-	-	2	3.1
Poor	-	-	-	-	-	-	-	-
Total	47	100.0	18	100.0	-	-	65	100.0

Source: Field work, 1968.

by study area. In answering the first objective of this survey, perhaps the most significant finding was the condition of the total housing stock. Less than 1 per cent of all houses were in poor condition (structurally obsolete) and only 12 per cent were in poor to fair condition (Table 15). A majority of houses, therefore, were in fair (44 per cent), fair to good (32 per cent) or good (12 per cent) condition.

This implies two possible situations. Either redevelopment has already replaced very poor housing (as might first be believed), or else apartments have located in residential areas of primarily good housing condition. The generally good condition of the present housing stock can largely be explained by its youthfulness. Nearly 50 per cent of the existing houses in the study areas are less than thirty years old, almost 75 per cent are under fifty years and none are over 65 years.⁵ Because the average life of a wood-framed house in Edmonton is from fifty to seventy years (although the rate of decay varies considerably according to the quality of the original building and amount of maintenance), a majority of existing dwellings, therefore, have yet to age or deteriorate to the extent that renewal is necessary.

On the other hand, apartment redevelopment could already have replaced many houses in poor condition before the windshield survey was undertaken, thereby accounting for the generally sound structural condition of the existing housing stock. In Chapter 5, which deals specifically with the

⁵The age of the housing stock of the study areas is considered specifically in a later section of this chapter (see Table 16).

redevelopment process, these two explanations are examined more fully to determine if transition areas, prior to redevelopment, coincide with districts of either good or poor housing.

The second purpose of the windshield survey was to determine if conversion activity is associated with poorer housing conditions. This relationship apparently exists in the campus fringe of the University of Alberta,⁶ and has been observed in other cities.⁷ Although some converted dwellings in the study areas are structurally obsolete, a greater number of single-family homes are in this condition. For all areas, 15 per cent of all single-family houses are in poor and poor to fair condition, whereas the respective figures for basement and other conversions are 7 and 12 per cent (Table 15). Furthermore, almost 22 per cent of all converted dwellings with other suites are in good condition, compared to 11 per cent of all single-family houses and 9 per cent of all basement conversions. However, the percentage scores of all dwellings in fair and fair to good condition are comparable among the different residential types. The range for single-family, basement and other conversions in fair to good condition is from 30 to 37 per cent, while the range for fair condition is from 36 to 46 per cent (Table 15).

Variations in housing quality exist among the study areas for

⁶R. F. Windsor, The Campus Fringe of the University of Alberta, unpublished M. A. thesis, University of Alberta, Edmonton, 1964, p. 98.

⁷B. Duncan and P. M. Hauser, Housing a Metropolis: Chicago, Glencoe, Illinois, The Free Press, 1960, 242 pp.; and Fuchs, op. cit.

different types of converted dwellings. In Area 4, for example, 88 per cent of all multiple-family dwellings with other suites are in good or fair to good condition, reflecting the fact that this area was once part of one of the most fashionable residential districts in Edmonton. In comparison, this same residential type tends to be in worse condition in Area 3. In this area, where considerable filtering down of housing appears to have taken place, only 36 per cent of other conversions are in fair to good condition (Table 15). Over 80 per cent of other conversions in Area 5 are in fair or better condition; here, many of these dwellings are less than thirty years old.

Most basement suites are in fair or better condition. In each study area but Area 4, over 85 per cent of all basement conversions are in this condition. This too reflects the fact that a majority of these houses have been built since 1940, and thus aging and deterioration have not become prevalent. Of the 96 basement conversions, only seven are in the category poor to fair condition (Table 15).

Age of Converted Dwellings

A basic difference exists between the age of converted dwellings with basement suites and the age of converted dwellings with other suites. Basement conversions, to the extent of nearly 80 per cent for all areas, are associated with houses built since 1940 (Table 16). In individual study areas (excluding Area 4), the range is from 65 to 100 per cent. On the other hand, approximately 85 per cent of other conversions were constructed before 1940. The figures for this residential type vary from 50 per cent in Area 5, 86 per cent in Area 6, 91

TABLE 16 — PERIOD OF CONSTRUCTION OF SINGLE-FAMILY
AND CONVERTED DWELLINGS, BY STUDY AREA

Period of Construction	Single- Family		Basement Conversions		Other Conversions		All Types	
	No.	%	No.	%	No.	%	No.	%
ALL AREAS								
Prior to 1921	82	24.2	17	17.7	23	54.8	122	25.6
1921 to 1940	79	23.3	4	4.2	13	30.9	96	20.1
After 1940	178	52.5	75	78.1	6	14.3	259	54.3
Total	339	100.0	96	100.0	42	100.0	477	100.0
AREA 1								
Prior to 1921	33	35.5	2	9.5	-	-	35	30.7
1921 to 1940	6	6.4	-	-	-	-	6	5.3
After 1940	54	58.1	19	90.5	-	-	73	64.0
Total	93	100.0	21	100.0	-	-	114	100.0
AREA 2								
Prior to 1921	8	11.6	-	-	-	-	8	11.4
1921 to 1940	6	8.7	-	-	-	-	6	8.6
After 1940	55	79.7	1	100.0	-	-	56	80.0
Total	69	100.0	1	100.0	-	-	70	100.0
AREA 3								
Prior to 1921	11	42.3	1	16.7	8	72.7	20	46.5
1921 to 1940	9	34.6	-	-	2	18.2	11	25.6
After 1940	6	23.1	5	83.3	1	9.1	12	27.9
Total	26	100.0	6	100.0	11	100.0	43	100.0

TABLE 16 — CONTINUED

Period of Construction	Single- Family		Basement Conversions		Other Conversions		All Types	
	No.	%	No.	%	No.	%	No.	%
AREA 4								
Prior to 1921	11	34.4	1	25.0	8	50.0	20	38.5
1921 to 1940	19	59.4	3	75.0	8	50.0	30	57.7
After 1940	2	6.2	-	-	-	-	2	3.8
Total	32	100.0	4	100.0	16	100.0	52	100.0
AREA 5								
Prior to 1921	5	21.7	8	36.4	3	37.5	16	30.2
1921 to 1940	8	34.8	-	-	1	12.5	9	17.0
After 1940	10	43.5	14	63.6	4	50.0	28	52.8
Total	23	100.0	22	100.0	8	100.0	52	100.0
AREA 6								
Prior to 1921	7	14.3	4	16.7	4	57.1	15	18.8
1921 to 1940	24	49.0	1	4.1	2	28.6	27	33.7
After 1940	18	36.7	19	79.2	1	14.3	38	47.5
Total	49	100.0	24	100.0	7	100.0	80	100.0
AREA 7								
Prior to 1921	7	14.9	1	5.6	-	-	8	12.3
1921 to 1940	7	14.9	-	-	-	-	7	10.8
After 1940	33	70.2	17	94.4	-	-	50	76.9
Total	47	100.0	18	100.0	-	-	65	100.0

Source: Assessors Department, City of Edmonton, 1968.

per cent in Area 3 to 100 per cent in Area 4 (Table 16). Most basement conversions are therefore less than thirty years old, while other conversions are from 30 – 55 years old. The main reason for these particular age relationships is due to house type differences. As noted previously, styles of houses built prior to World War II are generally not suited for basement conversion; and similarly, those house types erected since the war (primarily one storey structures) are not easily adapted to become rooming or boarding houses.

Although the conversion process is usually associated with older dwellings, all older houses are not necessarily converted residences. As Table 16 shows, many older homes have retained their single-family status. This fact is brought into clearer focus when Table 17 is examined. This table enumerates the houses built in a particular period and classifies them according to their land use type in 1968. For example, if all areas are grouped together, 70 per cent of the 104 houses built before 1921 are still single-family residences.

Differences are present, though, among areas. Whereas 95 per cent of all dwellings built prior to 1921 in Area 1 are still single-family homes, just 30 per cent have retained single-family status in Area 5. In all areas a greater majority of houses built between 1921 and 1940 (30 – 50 years old) remain structurally unmodified. The range is from 65 per cent in Area 4 to 100 per cent in Areas 1, 2 and 7 (Table 17). However, although 69 per cent of all houses built between 1940 and 1968 are still single-family residences, more houses constructed in this period have been converted than houses built in any other period. This largely reflects the demands for rental accommodation and the resulting

TABLE 17 — LAND USE STATUS OF DWELLINGS IN 1968,
BY PERIOD OF CONSTRUCTION AND STUDY AREA

Land Use Type	Prior to 1921		1921 to 1940		After 1940	
	No.	%	No.	%	No.	%
ALL AREAS						
Single-family	82	67.2	79	82.3	178	68.7
Basement conversions	17	13.9	4	4.2	75	29.0
Other conversions	5	18.9	13	13.5	6	2.3
Total	122	100.0	96	100.0	259	100.0
AREA 1						
Single-family	33	94.3	6	100.0	54	74.0
Basement conversions	2	5.7	-	-	19	26.0
Other conversions	-	-	-	-	-	-
Total	35	100.0	6	100.0	73	100.0
AREA 2						
Single-family	8	100.0	6	100.0	55	98.2
Basement conversions	-	-	-	-	1	1.8
Other conversions	-	-	-	-	-	-
Total	8	100.0	6	100.0	56	100.0
AREA 3						
Single-family	11	55.0	9	81.8	6	50.0
Basement conversions	1	5.0	-	-	5	41.7
Other conversions	8	40.0	2	18.2	1	8.3
Total	20	100.0	11	100.0	12	100.0

TABLE 17 — CONTINUED

Land Use Type	Prior to 1921		1921 to 1940		After 1940	
	No.	%	No.	%	No.	%
AREA 4						
Single-family	11	55.0	19	63.3	2	100.0
Basement conversions	1	5.0	3	10.0	-	-
Other conversions	8	40.0	8	26.7	-	-
Total	20	100.0	30	100.0	2	100.0
AREA 5						
Single-family	5	31.3	8	88.9	10	35.7
Basement conversions	8	50.0	-	-	14	50.0
Other conversions	3	18.7	1	11.1	4	14.3
Total	16	100.0	9	100.0	28	100.0
AREA 6						
Single-family	7	46.7	24	88.9	18	47.4
Basement conversions	4	26.6	1	3.7	19	50.0
Other conversions	4	26.7	2	7.4	1	2.6
Total	15	100.0	27	100.0	38	100.0
AREA 7						
Single-family	7	87.5	7	100.0	33	66.0
Basement conversions	1	12.5	-	-	17	34.0
Other conversions	-	-	-	-	-	-
Total	8	100.0	7	100.0	50	100.0

Source: Assessors Department, City of Edmonton, 1968.

concentrations of basement suites that characterize Areas 1, 5, 6 and 7.

Because conversion activity is generally associated with older dwellings, does this mean that a house has to age considerably before it is converted? Differences again exist between basement conversions and other converted dwellings. When converted, 60 per cent of all basement conversions were less than ten years old, and nearly 90 per cent were under twenty years old (Table 18). This is apparently the result of several factors. During and

TABLE 18 — AGE OF DWELLINGS WHEN CONVERTED, FOR ALL AREAS
(includes existing and removed houses)

Age Group	Basement Conversions ¹		Other Conversions ²	
	No.	%	No.	%
Less than 10 years	82	59.9	4	14.8
10 to 20 years	37	27.1	5	18.5
21 to 30 years	1	.7	4	14.8
31 to 40 years	8	5.8	6	22.3
41 to 50 years	8	5.8	8	29.3
Over 50 years	1	.7	-	-
Total	137	100.0	27	100.0

¹Excludes 23 dwellings for which date of conversion is unknown.

²Excludes 21 dwellings for which date of conversion is unknown.

Source: Assessors Department, City of Edmonton, 1968.

following World War II, Edmonton experienced a tremendous housing boom and to meet housing demands, tracts of bungalows similar in form and appearance were quickly constructed. To satisfy the still rising needs for housing, many of

these houses were in turn subdivided shortly after construction, even where zoning did not permit such activity.⁸ Another reason, revealed during field work, is that much of the wartime housing located in the study areas has filtered down to income groups which require the additional income that a basement suite provides.

With respect to the age when converted dwellings with other suites changed status, Table 18 indicates that there is a relatively even distribution in each age group. No definite pattern emerges because of the small sample size and the lack of precise conversion records for this house type.⁹ In Areas 3 and 4, though, where housing development began shortly after 1900, dwelling conversion first occurred in the late 1920s and early 1930s.¹⁰ This suggests, therefore, that many converted dwellings with other suites, for which precise data are lacking, were between twenty and thirty years old when first converted.

Ownership Change and Conversion

Several residents, when interviewed, reported that they had converted their homes shortly after purchasing them. This was done for several reasons, but particularly to help pay for the home and to supplement family income.

⁸City of Edmonton, Planning Department, Outline History of Illegal Suites, 1968, 8 pp. (Mimeographed.)

⁹Assessment files record the dates that dwellings were converted only after 1953, and because most converted dwellings with other suites changed status prior to this date, definite conclusions cannot be formed.

¹⁰These approximate dates were obtained from records kept in the Assessors Department during the course of field work, 1968.

To determine the extent and importance that ownership change and resulting conversion has in the transition process, Table 19 was prepared. Of the 112

TABLE 19 — OWNERSHIP CHANGE AND DWELLING CONVERSION,
FOR ALL AREAS
(includes existing and removed houses)

	Number ¹	Per Cent
Relationship	45	40.2
No relationship	67	59.8
Total	112	100.0

¹Excludes 96 dwellings for which no information was available.

Source: Assessors Department, City of Edmonton, 1968.

dwellings for which information is available, approximately 40 per cent were converted within one year after they changed ownership. That is, they have a status change related to an ownership change. This evidence seems to support the belief that when lower income groups locate in a neighbourhood, the chances of conversion activity becoming prevalent are considerably enhanced.¹¹

RECONVERSION

During the study period (1953 - 1968), forty converted dwellings reverted to single-family status (Table 20). Ninety per cent of the reconversions

¹¹This is discussed in: H. Hoyt, "The Pattern of Movement of Residential Neighbourhoods," Readings in Urban Geography, eds. H. M. Mayer and C. F. Kohn, Chicago, University of Chicago Press, 1959, p. 509.

TABLE 20 — RECONVERSIONS AND PROBABLE REASONS,
FOR ALL AREAS
(includes existing and removed houses)

Probable Reasons	Number	Per Cent
Change in owner, dwelling converted within one year, dwelling later reverts to single-family status with no change in owner	7	32.3
Change in owner, dwelling retains converted status, but reverts to single-family status shortly after with no change in owner	11	50.0
Change in owner, dwelling reverts immediately to single-family status	4	17.7
No apparent reasons associated with ownership patterns	18	
Total known probable reasons	22	100.0

Source: Assessors Department, City of Edmonton, 1968.

involved basement suites. Reconversion, therefore, although not accounted for in land use succession theory, is especially important in those transitional areas characterized by basement conversions (Areas 1, 5, 6 and 7). A basement suite can easily be used by a family as a recreation area, but once a large rooming house, for example, has been structurally modified, it is unlikely that it will revert to single-family status.

The reasons for reconversion taking place are associated primarily with income and ownership patterns. Of the known possible explanations, most

converted dwellings reverted to single-family use immediately or shortly following an ownership change (Table 20). Another third of the reconversions are related to the same person buying a house, converting it shortly afterwards and then reconverting it at a later date. This supports the assertion that people convert dwellings for additional income, but when their financial circumstances improve, there is no need for the income that suites provide.

SUMMARY

Conversion activity is an important feature of the residential transition process, and occurs largely as the result of demands for rental accommodation, filtering down of housing and homeowners' needs for additional income. Distinct spatial differences exist between the conversion activity which takes place in older districts near the central business district and that which occurs in newer areas. In particular, types of conversion differ. Basement conversions predominate in newer housing districts, whereas large, two storey multi-family dwellings are found mainly in long established neighbourhoods. Of significance, too, house type is the critical factor determining the form of conversion and whether change will take place; conversion may occur shortly after a house is constructed or not until it is many years old; and poorer housing conditions are just as prevalent among single-family houses as they are among converted residences. Reconversion of dwellings (mainly basement suites) also occurs, and is related primarily to ownership changes.

Chapter V

STRUCTURAL CHANGE IN TRANSITION AREAS: REDEVELOPMENT ACTIVITY

INTRODUCTION

In determining the most suitable location in the city for his redevelopment project, the apartment developer makes certain decisions which are spatial in character. These spatial decisions involve a three-level sequence of locational evaluation; city-wide, neighbourhood and site selection. Paramount in a city-wide context is the influence of existing zoning ordinances, the condition of the housing stock, and accessibility to employment centres and shopping and transportation facilities. The amenities of a neighbourhood are also important, particularly the quality of the immediate environment in relation to views, open space, traffic and adjacent land uses. The individual properties which are actually redeveloped, however, are determined by lot and building characteristics, or site factors. At this level of evaluation, the age and condition of dwellings and the size and cost of land parcels are carefully considered by the developer. In this chapter, significant site factors are examined, and comparisons are made between existing and redeveloped properties to determine if there is a definite pattern of structural change in the redevelopment process.

TYPES OF REDEVELOPMENT

Three distinct types of residential redevelopment characterize

the study areas. By order of importance, they are: walk-up apartments, duplexes, triplexes and quadruplexes, and high rise apartments. Walk-ups clearly dominate to the extent of 74 per cent of all redevelopment projects (Table 21).

TABLE 21 — TYPES OF RESIDENTIAL REDEVELOPMENT, FOR ALL AREAS, 1953-1968

Type	Number	Per Cent
Single-family dwellings	1	1.0
High rise apartments	6	5.8
Du, tri, quadruplexes	20	19.4
Walk-up apartments	76	73.8
Total	103	100.0

Source: Assessors Department, City of Edmonton, 1968.

There is only one instance where a single-family house replaced another single-family dwelling, and this occurred in Area 7 several years prior to any other form of redevelopment.

Duplexes, triplexes and quadruplexes are multiple-family dwellings which contain, respectively, two, three and four dwelling units. These units are located either beside or above and below each other (Plates 3 and 4). Walk-up apartments are typically two-and-a-half storey developments, containing from ten to thirty suites. They are usually made of wood and finished in stucco (Plates 5 and 6). The term "speculative" has been applied to this type of rede-



Plate 3. Duplex



Plate 4. Quadruplex



Plate 5. Walk-Up Apartment



Plate 6. Walk-Up Apartment

velopment because it is often quickly built and hastily sold to return maximum profits for least effort.¹ As a result, the methods and quality of construction are sometimes poor, and claims that areas of walk-up apartments might become future slums are at least partially justified.²

For purposes of this study, a high rise apartment was considered to be any building of six or more stories in height. This definition, although arbitrary, was influenced by the fact that most high rises constructed in Edmonton during the last few years have at least six floors. The six high rises located in Area 4 range in height from six to fifteen stories, while the number of suites varies from ten to just over 260 (Plate 7). Their quality of construction is better than that of walk-ups, reflecting the fact that high rise developments are sometimes called luxury apartments.

DISTRIBUTION OF REDEVELOPMENT ACTIVITY

It was noted in Chapter 2, in which the city-wide distribution of transition areas in Edmonton was described, that redevelopment is concentrated primarily near the central business district, near functional growth points and along major arterials (see Figure 3, p. 20). As well, various types of apartments

¹W. F. Smith, The Low Rise Speculative Apartment, Research Report No. 25, Centre for Real Estate and Urban Economics, University of California, 1964, 132 pp.

²This has been said of walk-up apartments in certain parts of Regina, Saskatchewan. See for example: C. Fowke, "Survey '66 Apartments," Canadian Builder, vol. 16 (June 1966), p. 66.



Plate 7. High Rise Apartment

characterize different parts of the city. High rises predominate in the area abutting the southern and western margins of the central business district and near the University of Alberta, while walk-up developments distinguish other transition areas.

Table 22, which lists the number and share of lot area of the

TABLE 22 — DISTRIBUTION OF RESIDENTIAL REDEVELOPMENT,
BY STUDY AREA, 1968

Study Areas	Single- Family Dwellings		Duplexes, Triplexes, Quadruplexes		Walk-Up Apartments		High Rise Apartments	
	%		%		%		%	
	No.	Lot Area	No.	Lot Area	No.	Lot Area	No.	Lot Area
1	-	-	4	3.3	4	7.5	-	-
2	-	-	3	2.9	12	24.8	-	-
3	-	-	5	6.8	19	40.6	-	-
4	-	-	-	-	6	7.7	6	28.5
5	-	-	4	5.3	9	25.3	-	-
6	-	-	4	3.4	10	19.7	-	-
7	1	.9	-	-	16	40.9	-	-
All Areas	1	.1	20	2.9	76	23.4	6	4.8

Source: Assessors Department, City of Edmonton, 1968.

different types of residential redevelopment, mirrors this city-wide distribution pattern. High rises are found only in Area 4, the district closest to the central business district. Walk-up and lower density forms of redevelopment characterize the other study areas. Excluding Area 1 (where apartments are found only

along a major arterial), Area 4 has the least number of low density forms of redevelopment. This largely reflects the fact that high land costs in this area now prohibit anything but high rise developments.³

LOT CHARACTERISTICS OF REDEVELOPED PROPERTIES

Size of Lot

Lot size is an important factor in the redevelopment process: "properties that are deep and wide are invariably sought out (for apartment sites)."⁴ In the study areas, two distinct lot sizes were initially surveyed. In Areas 1, 2, 3, 4 and 7, which are situated on the north side of the North Saskatchewan River valley, most lots are fifty feet wide and 150 feet deep, totalling 7,500 square feet. In Areas 5 and 6, on Edmonton's south side, the standard lot size is 33 feet by 132 feet, or 4,356 square feet. Few lots in these two areas have been further subdivided, but in the other study areas, fifty foot lots, or groups of fifty foot lots, have been replatted into properties ranging in width from sixteen to forty feet. Many of these smaller, replatted lots (located mainly in Areas 3 and 4) total less than 4,000 square feet in size.

In Edmonton, the current zoning bylaw stipulates that "the minimum site area for each apartment building block shall be 8,600 square

³Land costs and their effect on redevelopment are discussed specifically in a later section of this chapter.

⁴E. T. Rashleigh, "Observations on Canadian Cities, 1960 - 1961," Plan Canada, vol. 3 (September 1962), p. 71.

feet."⁵ To meet this size requirement, and also to reduce land assembly costs, developers have mainly selected larger rather than smaller, subdivided properties.⁶ The importance of larger lot selection can be demonstrated by grouping all residential lots into two sizes—those over and those under 4,300 square feet. The 4,300 square footage was chosen as a limit in size for two reasons: first, the combination of two 4,300 square foot lots meets the minimum requirement for site development; and second, the 4,300 square foot lot is the typical size of lots in Areas 5 and 6.⁷ Significantly, when the redeveloped lots in all areas were examined, it was found that 92 per cent of the 183 lots redeveloped by residential uses were over 4,300 square feet (Table 23). Smaller lots, therefore, have been decidedly bypassed in favour of larger properties.

The importance of lot size is further substantiated when individual areas are examined. In Area 4, for example, developers have selected only ten of the 27 residential lots of less than 4,300 square feet, but have chosen 27 of the sixty lots of over 4,300 square feet, many of which total 7,500 square feet in size. In all instances, the smaller redeveloped lots selected in this area were

⁵City of Edmonton, Planning Department, Zoning Bylaw No. 2135, 1964, n. p.

⁶For example, two houses situated on 7,500 square foot lots can be bought for a cheaper price than three houses of similar style that occupy 5,000 square foot lots, even though the grouped lot size is the same (15,000 square feet).

⁷The zoning choice of the minimum apartment development area (8,600 square feet) was based partly on the fact that most lots in the older sections of Edmonton's south side are 4,356 square feet, and when combined, two of these lots total just over the minimum areal requirement.

TABLE 23 — SIZE OF LOTS REDEVELOPED BY RESIDENTIAL USES, BY STUDY AREA, 1953-1968

Study Areas	Less 4,300 square ft.			Over 4,300 square ft.			Total Redeveloped Lots			
	Total		No. ¹	%	Total		Total	Less 4,300		Over 4,300
	Lots	Redev.			Lots	Redev.		No.	%	
1 ²	-	-	-	-	21	9	9	-	-	9
2	2	-	-	-	97	28	28	-	-	28
3	18	4	22.2	50.7	67	34	38	4	10.5	34
4	27	10	37.0	45.0	60	27	37	10	27.0	27
5	-	-	-	-	83	20	20	-	-	20
6	-	-	-	-	112	19	19	-	-	19
7	7	-	-	-	99	32	32	-	-	32
Total	54	14	25.9	29.5	539	169	183	14	7.7	169

¹Redev. stands for redevelopment.

²Only properties along 82 Street, where all apartment redevelopment is located, have been analyzed.
Source: Assessors Department, City of Edmonton, 1968.

part of a land assembly parcel that included a majority of lots 7,500 square feet in size. An analogous situation to that exemplified by Area 4 exists in the other study areas (Table 23).

Cost of Land⁸

Land costs also have an influence on the formation of residential transition areas, and in particular on the intensity and types of redevelopment that occur. Once zoning is permissive and allows apartments to locate in a neighbourhood, developers will concentrate their efforts to purchase properties quickly and cheaply before land costs rise, forcing development to shift to other parts of the city. While land costs are still low, low density forms of redevelopment, such as duplexes, sometimes locate in transition areas. In time, though, costs may rise to such an extent that only high rise developments are economically feasible.⁹

Information on land costs was available for 128 of 176 properties

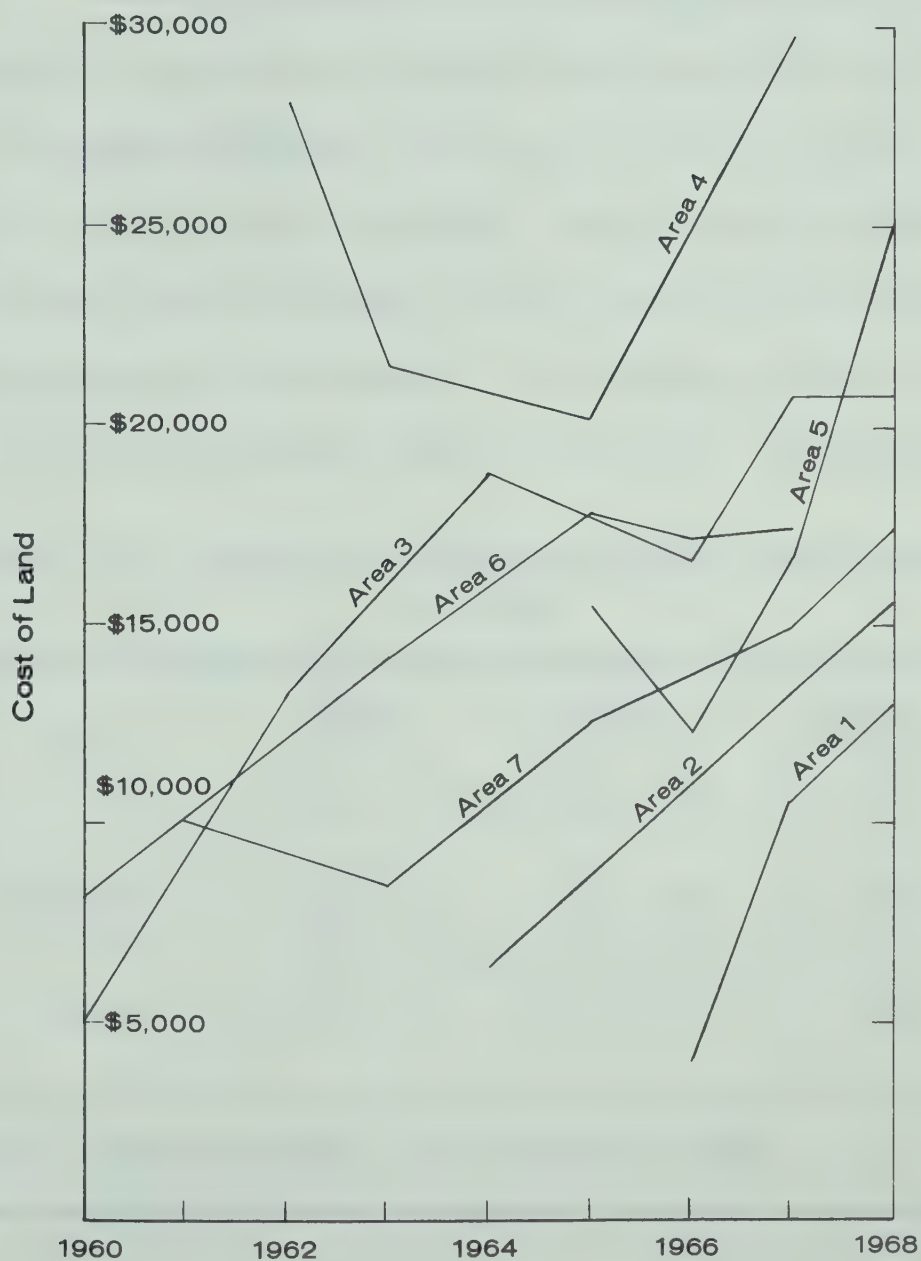
⁸In this study, land costs are defined as the total cost of a lot and the house occupying that lot.

⁹This tendency coincides with the land economist's view of urban structure: "Land economists believe that the determination of urban land use is a market process: The kind and intensity of use made of each parcel of land result from economic competition among the various possible uses. The processes of city growth are seen as economic, and the pattern of urban land use is deemed the result of the land market....The entrepreneur who owns a parcel of land attempts to ascertain the use that will yield him the highest revenue, and, as each owner tries to maximize his income, every plot tends to achieve optimum use." R. Thomlinson, Urban Structure: The Social and Spatial Character of Cities, New York, Random House, 1969, p. 159.

redeveloped by residential uses between 1960 and 1968.¹⁰ This information has been graphed to illustrate three closely related characteristics associated with land costs in transition areas (Figure 16). First, in each area, costs have spiralled through time. For example, they have risen from \$5,000 to \$21,000 per fifty foot lot in Area 3 between 1960 and 1968, and from \$7,000 to \$15,000 in Area 2 between 1964 and 1968 (Figure 16). Because each area is still in transition, it is difficult to tell if land values have risen to that point where redevelopment is discouraged. Second, land costs are highest in those areas closest to the central business district (Areas 3 and 4) and the Strathcona business centre (Areas 5 and 6). In Area 4, the average cost of a fifty foot lot in 1967 was nearly \$30,000, but by way of contrast, costs are cheapest in Area 1 (\$13,000), which is the study area located farthest from the central business district. The third characteristic is that changing property costs have influenced the type of redevelopment that has occurred in an area through time. In Areas 1, 2 and 3, the lowest land costs coincide with the redevelopment of properties by duplexes, triplexes and quadruplexes, but when the land values rose sharply in these areas as the result of intensive apartment construction, such low density forms of redevelopment ceased entirely. In Area 4, which has the highest land values, only high rises have been developed since 1962.

¹⁰These records are incomplete because the Assessors Department has not always recorded property sales, particularly those occurring before 1960. Land costs have been averaged for each year and calculated on a fifty foot lot frontage basis to facilitate comparisons among areas.

TRENDS OF LAND COSTS IN TRANSITION AREAS



Land costs have been calculated
on a fifty foot lot frontage basis

Source: Assessors Department,
City of Edmonton,
1968

BUILDING CHARACTERISTICS OF REDEVELOPED PROPERTIES

Residential Types

During the discussion of land use succession and site development in Chapter 3, it was noted that single-family dwellings constituted over 80 per cent of the replaced residences, while basement (12 per cent) and other conversions (7 per cent) comprised the remainder. Because the majority of redeveloped properties were single-family homes, it may be inferred that this is the main residential type sought for redevelopment. This is misleading. In fact, the replacement ratios of the three residential types are quite similar. Table 24 shows that

TABLE 24 — RESIDENTIAL TYPES REDEVELOPED, FOR ALL AREAS,
1953-1968

Status	Single-Family		Basement Conversions		Other Conversions	
	No.	%	No.	%	No.	%
Removed	186	35.4	28	22.6	17	28.8
Existing	339	64.6	96	77.4	42	71.2
Total	525	100.0	124	100.0	59	100.0

Source: Assessors Department, City of Edmonton, 1968.

35 per cent of all single-family homes have been replaced, and also that 29 per cent of all converted dwellings with other suites and 23 per cent of all basement conversions have been redeveloped. However, in the initial phases of the

redevelopment process, few converted dwellings are replaced; they succumb only after redevelopment becomes established in an area.

Age of Replaced Dwellings

In the current literature on apartment redevelopment, there are two conflicting views regarding the extent to which the age and condition of the housing stock influence the redevelopment process. One side claims that: "the tendency for apartment buildings to cluster in districts near the center of the city is clearly related to the age and obsolescence of the buildings which are replaced in the process in these areas,"¹¹ while the other side states that: "...replacement of older structures by apartment construction is not primarily a function of aging and deterioration as economic theory suggests."¹² Neither side, however, fully substantiates its argument with an empirical analysis of replaced dwellings. The following two sections provide such an analysis to clarify and determine (in Edmonton at least) if one position is more justified than the other, or to determine if both positions have a certain amount of validity.

Information collected for this study indicates that the aging of dwellings has considerable significance in the selection of sites for apartments.¹³

¹¹Smith, The Low Rise Speculative Apartment, op. cit., p. 79.

¹²L. S. Bourne, "Market, Location, and Site Selection in Apartment Construction," The Canadian Geographer, vol. 12 (Winter 1968), p. 220.

¹³It should be recognized that what might be considered old in a youthful city such as Edmonton might not be considered old in a long established city such as Toronto.

More older than younger dwellings have been redeveloped. For all areas, 30 per cent of the 231 redeveloped dwellings were more than fifty years old, while another 41 per cent were over thirty years (Table 25). Because the average life of a wood-framed house in Edmonton varies from fifty to seventy years, a considerable number of these buildings were near the end of their structural life and ready for replacement.

Differences exist among areas, though, and have resulted from the original settlement patterns. In Areas 3, 4, 5 and 6, which were mainly developed by 1940, a majority of dwellings were more than thirty years old when replaced (86, 90, 87 and 86 per cent respectively; Table 25). Even in Areas 1, 2 and 7, which were not built-up until World War II, older houses have been selected. Although located in newer settings, these particular areas possess scattered housing development that took place during Edmonton's land boom period, 1910 - 1914.

Though all older houses have not yet been redeveloped, there is a greater tendency for them to be replaced than to remain standing. This is true in each district but Area 1.¹⁴ This fact, further confirming the importance of aging in the redevelopment process, is clearly illustrated in Table 26, in which the ratios of existing and removed dwellings built in a particular period are compared. Excluding Area 1, 56 per cent of all dwellings built before 1921 have

¹⁴The reason that a majority of older dwellings still remain in this area is because apartment redevelopment is restricted as yet to the major arterial, 82 Street.

TABLE 25 — AGE OF EXISTING AND REMOVED DWELLINGS,
BY STUDY AREA

Age of Dwellings	Existing		Removed	
	No.	%	No.	%
ALL AREAS				
Under 30 years	259	54.3	68	29.6
30 to 50	96	20.1	96	41.3
Over 50 years	122	25.6	67	29.1
Total	477	100.0	231	100.0
AREA 1				
Under 30 years	73	64.0	7	50.0
30 to 50	6	5.3	5	35.7
Over 50 years	35	30.7	2	14.3
Total	114	100.0	14	100.0
AREA 2				
Under 30 years	56	80.0	11	39.3
30 to 50	6	8.6	7	25.0
Over 50 years	8	11.4	10	35.7
Total	70	100.0	28	100.0
AREA 3				
Under 30 years	12	27.9	7	14.3
30 to 50	11	25.6	32	65.1
Over 50 years	20	46.5	10	20.6
Total	43	100.0	49	100.0

TABLE 25 — CONTINUED

Age of Dwellings	Existing		Removed	
	No.	%	No.	%
AREA 4				
Under 30 years	2	3.8	4	9.6
30 to 50	30	57.7	23	54.7
Over 50 years	20	38.5	16	35.7
Total	52	100.0	43	100.0
AREA 5				
Under 30 years	28	52.8	3	13.6
30 to 50 years	9	17.0	4	18.2
Over 50 years	16	30.2	15	68.2
Total	53	100.0	22	100.0
AREA 6				
Under 30 years	38	47.5	3	13.6
30 to 50	27	33.7	7	27.3
Over 50 years	15	18.8	13	59.1
Total	80	100.0	23	100.0
AREA 7				
Under 30 years	50	76.9	33	62.3
30 to 50	7	10.8	18	34.0
Over 50 years	8	12.3	2	3.7
Total	65	100.0	53	100.0

Source: Assessors Department, City of Edmonton, 1968.

TABLE 26 — STATUS OF SINGLE-FAMILY AND CONVERTED DWELLINGS
IN 1968, BY PERIOD OF CONSTRUCTION AND STUDY AREA

Status	Prior to 1921		1921 to 1940		After 1940		Total	
	No.	%	No.	%	No.	%	No.	%
ALL AREAS								
Existing	122	51.1	96	65.8	259	80.2	477	67.5
Removed	117	48.9	50	34.2	64	19.8	231	32.5
Total	239	100.0	146	100.0	323	100.0	708	100.0
AREA 1								
Existing	35	87.5	6	60.0	73	93.8	114	82.5
Removed	5	12.5	4	40.0	5	6.2	14	17.5
Total	40	100.0	10	100.0	78	100.0	128	100.0
AREA 2								
Existing	8	40.0	6	54.5	56	83.6	70	71.4
Removed	12	60.0	5	45.5	11	16.4	28	28.6
Total	20	100.0	11	100.0	67	100.0	98	100.0
AREA 3								
Existing	20	43.5	11	40.7	12	63.2	43	46.7
Removed	26	56.5	16	59.3	7	36.8	49	53.3
Total	46	100.0	27	100.0	19	100.0	92	100.0

TABLE 26 — CONTINUED

Status	Prior to 1921		1921 to 1940		After 1940		Total	
	No.	%	No.	%	No.	%	No.	%
AREA 4								
Existing	20	43.5	30	66.7	2	50.0	52	54.7
Removed	26	56.5	15	33.3	2	50.0	43	45.3
Total	46	100.0	45	100.0	4	100.0	95	100.0
AREA 5								
Existing	16	50.0	9	75.0	28	90.3	53	70.7
Removed	16	50.0	3	25.0	3	9.7	22	29.3
Total	32	100.0	12	100.0	31	100.0	75	100.0
AREA 6								
Existing	15	46.9	27	93.1	38	92.7	80	78.4
Removed	17	53.2	2	6.9	3	7.3	22	21.6
Total	32	100.0	29	100.0	41	100.0	102	100.0
Existing	8	34.8	7	58.3	50	60.2	65	55.1
Removed	15	65.2	5	41.7	33	39.8	53	44.9
Total	23	100.0	12	100.0	83	100.0	118	100.0

Source: Assessors Department, City of Edmonton, 1968.

been redeveloped, while only 20 per cent of the houses built since 1940 have been replaced. The 20 per cent redevelopment of newer houses can largely be explained by reason that apartments have located in newer districts (Areas 1, 2 and 7), and also because newer properties have sometimes been required as part of a larger development site in older established areas (Areas 3 and 4).

With respect to the nature of site selection through time, there is a greater tendency for older properties to be redeveloped in the initial stages of redevelopment, but as the transition process continues, newer properties are in turn replaced. Areas 2, 3 and 5 have been chosen to illustrate this principle.¹⁵ The numbers and ages of replaced dwellings have been noted for each year since 1963, after which the most redevelopment has occurred (Table 27). Prior to 1968 in Area 2, for example, five of the seven replaced houses were over forty years old, but in 1968, 50 per cent of the twenty removed dwellings were less than thirty years. Similarly, in Areas 3 and 5, it was only in 1967 that houses less than thirty years old became prevalent in the redevelopment process. This evidence supports the earlier stated view that, primarily because of cost factors, older properties are sought first for replacement.¹⁶

¹⁵All seven study areas illustrate this temporal pattern of change. Area 2 was chosen because it is similar to and representative of Areas 1, 2 and 7 in terms of location in the city, house types and period of initial settlement. On a similar basis, Area 3 represents Areas 3 and 4, while Area 5 is typical of Areas 5 and 6.

¹⁶The fact that older properties are initially selected partially explains the reason that land costs are cheaper when redevelopment first locates in a neighbourhood.

TABLE 27 — SITE SELECTION THROUGH TIME:
AGE OF REPLACED DWELLINGS, SELECTED AREAS, 1963-1968

Age Group	1963	1964	1965	1966	1967	1968	Total
AREA 2							
Under 11 years	-	-	-	-	-	-	-
11 to 20	-	-	-	-	-	-	-
21 to 30	-	-	-	-	1	10	11
31 to 40	-	-	-	-	1	2	3
41 to 50	1	-	-	-	2	1	4
Over 50 years	-	-	1	1	-	7	9
Total	1	-	1	1	4	20	27
AREA 3							
Under 11 years	-	-	-	-	-	-	-
11 to 20	1	1	-	-	-	-	2
21 to 30	-	-	-	-	1	3	4
31 to 40	4	-	-	1	-	3	8
41 to 50	1	2	-	5	1	1	10
Over 50 years	1	2	-	1	1	1	6
Total	7	5	-	7	3	8	30
AREA 5							
Under 11 years	-	-	-	-	-	-	-
11 to 20	-	-	-	-	-	-	-
21 to 30	-	-	-	-	1	2	3
31 to 40	-	-	-	-	1	1	2
41 to 50	-	-	-	-	-	1	1
Over 50 years	4	1	1	-	6	2	14
Total	4	1	1	-	8	6	20

Source: Assessors Department, City of Edmonton, 1968.

Condition of Replaced Dwellings

Because the Assessors Department does not record the condition of houses, it was impossible to determine precisely if poor housing quality was a causal factor of redevelopment. However, the Assessors Department does record in most cases whether a removed dwelling was demolished or relocated onto another site, and when this information is related to other variables such as the type and age of a house, an approximate assessment of the importance of housing condition in the redevelopment process can be achieved.

Information on housing removal methods was available for 177 of the 231 replaced dwellings. Of this total, 113 (63 per cent) were demolished and 64 (37 per cent) were relocated on sites outside the city limits.¹⁷ Because most houses were demolished, these figures imply that a majority were in marginal condition, but this generalization is not completely valid. Some developers, for example, consider it uneconomical at times to relocate houses, even if they are in good condition.¹⁸ Also, certain house types are difficult to relocate. Forty-two per cent of the demolished houses were one-and-three-quarter and two storey dwellings which, because of their height and size, are almost impossible to move along city streets.¹⁹ Although some of these houses were probably in marginal

¹⁷City bylaws prohibit the relocation of these dwellings in new subdivisions; consequently, they are usually relocated in small towns within a 100 mile radius of Edmonton. Their usual selling price is around \$2,000.

¹⁸Personal Communication, Mr. E. Lasner, Building Contractor, March, 1969.

¹⁹This is confirmed by the fact that of the 64 relocated houses, only two were two storey structures.

condition, it is unlikely that all of them were.

Age is perhaps the best indicator that all demolitions were not the result of deterioration and obsolescence.²⁰ Of the 113 demolitions, nearly half (53) were over fifty years old (Table 28). As noted previously, because

TABLE 28 — AGE OF REPLACED DWELLINGS BY METHOD OF REMOVAL,
FOR ALL AREAS, 1953-1968

Age Group	Demolished		Relocated		Not Known	
	No.	%	No.	%	No.	%
Under 11 years	-	-	-	-	1	1.9
11 to 20	2	1.8	25	39.0	3	5.6
21 to 30	14	12.4	19	29.7	4	7.4
31 to 40	14	12.4	8	12.5	6	11.1
41 to 50	30	26.5	4	6.3	34	62.9
Over 50 years	53	46.9	8	12.5	6	11.1
Total	113	100.0	64	100.0	54	100.0

Source: Assessors Department, City of Edmonton, 1968.

houses over this age are near the end of their structural life, it is reasonable to believe that a majority of these 53 houses were ready to be torn down, but that most of the younger demolished dwellings still had several years or more of useful life remaining. Similarly, it can be assumed that only six dwellings for which

²⁰ It is recognized that because rates of deterioration vary considerably according to the quality of the original building and amount of maintenance, no close relationship can be drawn between the age and condition of a house.

method of removal information is lacking—those over fifty years old—were in marginal condition when replaced. By this reasoning, it is likely that, at the most, 59 or about one-quarter of the 231 replaced dwellings were in marginal condition. This estimate is probably too high, and it is more likely that less than one-fifth were in poor condition.²¹

Using the estimate, therefore, that about one-quarter of the replaced residences were in marginal condition, tentative answers can be given to two questions posed earlier in this thesis: first, do transition areas coincide with districts of distinct housing quality; and second, is redevelopment primarily a function of deterioration as economic theory suggests? These questions can be answered by reconstructing an approximate picture of housing conditions as they existed in the study areas prior to redevelopment. To achieve this picture, the housing conditions of existing dwellings (as determined by the windshield survey) and removed dwellings (all demolitions and unknown method of removal dwellings over fifty years old were considered to be in marginal or worse than fair condition) have been grouped together (Table 29).²²

²¹ From observations made in the study areas and other transition areas during 1968 and 1969 (after data collection was completed), it was noted that most demolished dwellings (over 80 per cent) were still in structurally sound condition.

²² It is recognized that this technique presents only a general description of the pre-redevelopment housing conditions. The need in urban research to reconstruct past cityscapes to determine the conditions that existed prior to change is expressed in: R. C. Harris, "Historical Geography in Canada," The Canadian Geographer, vol. 11 (Winter 1967), pp. 239-240.

TABLE 29 — HOUSING CONDITIONS OF EXISTING AND
REMOVED DWELLINGS, BY STUDY AREA

Condition	Existing		Removed		Housing Conditions Before Redevelopment	
	No.	%	No.	%	No.	%
ALL AREAS						
Fair or better	415	87.7	172	74.5	587	82.9
Worse than fair	62	12.3	59	25.5	121	17.1
Total	477	100.0	231	100.0	708	100.0
AREA 1						
Fair or better	95	85.1	12	85.7	107	77.5
Worse than fair	19	14.9	2	14.3	21	22.5
Total	114	100.0	14	100.0	138	100.0
AREA 2						
Fair or better	59	84.5	19	67.9	78	79.6
Worse than fair	11	15.5	9	32.1	20	30.4
Total	70	100.0	28	100.0	98	100.0
AREA 3						
Fair or better	33	76.7	41	83.6	74	80.4
Worse than fair	10	23.3	8	16.4	18	19.6
Total	43	100.0	49	100.0	92	100.0

TABLE 29 — CONTINUED

Condition	Existing		Removed		Housing Conditions Before Redevelopment	
	No.	%	No.	%	No.	%
AREA 4						
Fair or better	44	84.7	32	74.4	76	80.0
Worse than fair	8	15.3	11	25.6	19	20.0
Total	52	100.0	43	100.0	95	100.0
AREA 5						
Fair or better	48	90.6	8	36.4	56	74.7
Worse than fair	5	9.4	14	63.6	19	25.3
Total	53	100.0	22	100.0	75	100.0
AREA 6						
Fair or better	73	91.5	9	40.9	82	80.4
Worse than fair	7	8.5	13	59.1	20	19.6
Total	80	100.0	22	100.0	102	100.0
AREA 7						
Fair or better	63	96.9	51	96.2	114	96.6
Worse than fair	2	3.1	2	3.8	4	3.4
Total	65	100.0	53	100.0	118	100.0

Source: Field work, 1968, and estimates based on demolitions permits collected from Assessors Department, City of Edmonton, 1968.

Prior to redevelopment, approximately 20 per cent of the housing stock in each district but Areas 2 and 7 was in worse than fair condition (Table 29). This indicates that, although most houses were in fair or better condition, there was a nucleus in marginal condition that probably served to attract redevelopment to the study areas. At the same time, because most dwellings were of fair or better quality, the amenities of each neighbourhood were sufficient to encourage redevelopment. If, however, most houses had been in marginal condition, as they are in the proposed Boyle Street renewal district that lies just east of Edmonton's city centre, it is unlikely that apartments would have been attracted to the study areas. It can be concluded, therefore, that the housing quality of transition areas prior to redevelopment is characterized by a majority of houses in sound structural condition, with some dwellings of marginal quality, ripe for replacement.

The second question, which asks if redevelopment is primarily a function of deterioration, can also be answered by examination of Table 29. For all areas, most removed dwellings—to the extent of 75 per cent—were in fair or better condition. This score represents all areas but Areas 5 and 6, where nearly 60 per cent of all removed dwellings were likely in marginal condition. Except for these two districts, redevelopment is not primarily a function of deterioration.

Other Building Characteristics

Several other characteristics of removed dwellings were also

collected from the Assessors Department. These factors, including house types, construction quality and dwelling repairs, were found to have only limited significance in site selection and the redevelopment process. They do, nevertheless, provide additional insights into the nature of this process.

There is no one particular house type that has been sought for redevelopment, although old style dwellings (built before 1940) rather than modern style buildings (built after 1940) of a particular house type have been mainly replaced.²³ However, all the shacks that once existed (six) have been torn down, being replaced in the initial phases of redevelopment in Areas 1 and 3.

Houses that were classified by the Assessors Department as being of fair original construction quality constitute the majority of existing (70 per cent) and removed (71 per cent) dwellings. More dwellings of worse than fair construction, however, have been replaced (13 per cent of all replaced houses) than remain standing (9 per cent of all existing houses). Buildings of poorer construction quality can be expected to deteriorate faster than others, and hence be ready for replacement sooner than buildings of better quality. In contrast, and as might be expected, there are more existing than removed dwellings of better than fair construction quality (20 and 16 per cent of all existing and removed

²³ Replaced house types as a percentage of all those redeveloped include: shacks (2.6), cottages (29.5), bungalows (20.8), one-and-a-half storey (19.9), one-and-three-quarter storey (9.1) and two storey (18.1). These figures are comparable to the existing proportions of different house types (see Table 13, p. 77).

dwellings respectively).

Very few buildings, either replaced or existing, have had maintenance repairs, such as a new porch, plumbing or heating, which require a building permit from City Hall.²⁴ Only 15 per cent of the existing housing stock and 12 per cent of all removed houses have had such repairs. The claim cannot be specifically made, therefore, that lack of building maintenance has led to deterioration and hastened redevelopment because existing buildings have been equally neglected in repairs.

OWNERSHIP CHARACTERISTICS OF REDEVELOPED PROPERTIES

Ownership Status Prior to Redevelopment

In all the study areas but Area 2, more rented than owner-occupied dwellings have been redeveloped, totalling 60 per cent of the 231 replaced dwellings (Table 30). This indicates, to a certain extent, the speculative value which is attached to transitional area housing. This is particularly so in Area 4, where 86 per cent of the redeveloped dwellings were renter-occupied. Because this is an older established area with a considerable number of converted houses, it can be expected that a high proportion of dwellings will be renter-occupied. However, many of the absentee owners of properties in this area were noted to be mortgage, real estate and other land holding companies, typical holders of speculative properties.

²⁴Minor repairs, such as painting, which do not require a building permit, are not noted by the Assessors Department.

TABLE 30 — OWNERSHIP STATUS PRIOR TO REDEVELOPMENT
OF REPLACED DWELLINGS, BY STUDY AREA, 1953-1968

Study Areas	Owner- Occupied		Renter- Occupied		Total Dwellings
	No.	%	No.	%	
1	6	42.9	8	57.1	14
2	20	71.4	8	28.6	28
3	22	44.9	27	55.1	49
4	6	14.3	36	85.7	42
5	7	31.8	15	68.2	22
6	10	43.4	13	56.6	23
7	22	41.5	31	58.5	53
All Areas	93	40.4	137	59.6	231

Source: Assessors Department, City of Edmonton, 1968.

In contrast, in Area 2, which has experienced apartment construction only since 1966, most properties redeveloped before 1968 were occupied by their owners (71 per cent; Table 30). This high proportion can be explained by the fact that apartments suddenly located in a predominantly single-family, owner-occupied neighbourhood. It should be added, however, that in 1968 just 40 or 57 per cent of the existing 70 dwellings in this area remained owner-occupied, clearly indicating the speed with which speculators and developers rush into a neighbourhood to purchase properties while prices are still low. In each of the other study areas, a majority of redeveloped dwellings were renter-occupied prior to their replacement.

Length of Ownership of Removed Dwellings

Basic differences in length of ownership patterns exist between removed owner-occupied and removed renter-occupied dwellings. Most redeveloped owner-occupied houses were lived in for more than ten years before being torn down (55 per cent; Table 31). Only 14 per cent were resided in for less than five years. Apparently, therefore, people who have just bought a house and have taken up residence in it within the past five years are very hesitant to move again so soon—only 13 of 91 such homeowners have done so (Table 31). Long-time owner occupancy does not necessarily hinder redevelopment, although fewer owner-occupied dwellings (93 of 413) have been redeveloped than renter-occupied houses (113 of 294). The fact that fewer owner-occupied residences have been redeveloped is indicative, in part, of homeowners' resistance to change.

In contrast, a majority of renter-occupied dwellings have been redeveloped within five years of ownership change (57 per cent; Table 31). This probably reflects the speculative value which is placed upon housing in transition areas. Properties are often bought from homeowners, rented out, and then sold shortly afterwards to apartment developers.

Number of Owners of Removed Dwellings

Removed dwellings, of all residential types (single-family and basement and other conversions), have had more owners than existing dwellings of the same types. For example, 63 per cent of all existing single-family houses

TABLE 31 — LENGTH OF DWELLING OWNERSHIP BY STATUS AND TYPE, FOR ALL AREAS

Length of Ownership	Owner-occupied Dwellings		Renter-occupied Dwellings	
	Existing No.	%	Existing No.	%
Under 1 year	16	4.9	1	1.1
1 to 5	62	19.4	12	12.9
5 to 10	66	20.6	29	31.2
Over 10 years	176	55.1	51	54.8
Total	320	100.0	93	100.0
			157	100.0
			138	100.0

Source: Assessors Department, City of Edmonton, 1968.

have had just one or two owners since 1953, whereas the comparable figure for removed single-family houses is just 34 per cent (Table 32). This same general relationship exists for converted dwellings, although these types have had more owners than single-family homes. Sixty-five per cent of the removed converted dwellings with other suites, for instance, have had more than four owners. Also interesting is the fact that no removed converted dwelling has had just one owner between 1953 and the date of its removal, even though a number of existing conversions have had just one homeowner.

It was not determined precisely if there is a relationship between the age and condition of dwellings and the number of owners they have had. It was noted, though, that although a dwelling is older, it will not necessarily have had more owners than a newer house. However, houses that were apparently in marginal condition when replaced or located on major arterials have tended to have had more ownership changes than other dwellings.

SUMMARY

Apartment redevelopment is the dominant feature and culmination of structural change in residential transition areas. Evidence collected for this study has demonstrated that there is, indeed, a definite pattern of change in site selection and the redevelopment process. Developers in most cases have chosen large lots (over 4,300 square feet) rather than smaller properties, concentrating their efforts to purchase these properties quickly before land costs become prohibitive. As well, older dwellings, many renter-occupied, are mainly sought

TABLE 32 — NUMBER OF DWELLING OWNERSHIP CHANGES BY STATUS AND TYPE,
FOR ALL AREAS, 1953-1968¹

No. Changes	Single-family		Basement Conversions		Other Conversions	
	No.	%	Existing No.	Removed %	Existing No.	Removed %
1	90	26.8	11	5.9	16	16.5
2	120	35.7	54	29.0	19	19.6
3	64	19.0	59	31.7	29	29.9
4	40	11.9	29	15.6	16	16.5
5	15	4.5	21	11.3	11	11.3
6	4	1.2	10	5.4	4	4.1
7	2	.6	1	.5	2	2.1
8	-	-	1	.5	-	-
9	1	.3	-	-	-	-
Total	339	100.0	186	100.0	96	100.0
			28	100.0	42	100.0
					17	100.0

¹ Excludes purchase by apartment developer.
Source: Assessors Department, City of Edmonton, 1968.

for replacement, although newer houses are sometimes included in land assembly parcels, particularly in the later stages of transition. Structurally obsolete dwellings, however, do not weigh significantly in the redevelopment process, as most replaced houses were still in sound structural condition. This largely reflects the fact that apartment redevelopment is attracted to neighbourhoods where the immediate environmental amenities will guarantee the success of the developer's investment.

Chapter VI

POPULATION CHANGE IN TRANSITION AREAS

INTRODUCTION

Dwelling conversion and apartment redevelopment, the main features of physical change in transition areas, have been accompanied by considerable changes in the population structure of several of the study areas.¹ With the increased availability of rental housing units, more people, especially those between the ages of twenty and thirty, have come to reside in these areas. Population densities have also increased. At the same time, the replacement of one and two-family homes has resulted in marked changes in household composition characteristics. This chapter, therefore, documents the significant alterations in population structure which have accompanied functional and structural change.

THE CHANGING DEMOGRAPHIC PATTERN

Measurement of Population Change

The Dominion Bureau of Statistics has made available, in the form of computer print-out statements, unpublished information at the enumeration

¹As will be discussed, 1966 is the latest date for which census population data are available. Because several areas did not experience apartment redevelopment until after this date, census information does not always capture population changes which have resulted from redevelopment activities.

area level for the 1961 and 1966 censuses. As noted in the introduction to this thesis, the study areas were selected to coincide with enumeration areas so that these data could be utilized to analyze population changes. Unfortunately, because enumeration data are not available prior to 1961 or after 1966, the analysis is limited in time, with the result that several areas (Areas 1, 2 and 5), in which apartments did not locate until after 1966, do not show population changes that are related to redevelopment. This shortcoming, nevertheless, possesses advantages. The fairly static population structure of Area 2, for example, can be contrasted to areas of change. Similarly, in Areas 1 and 5, the effects of conversion activity alone can be isolated and examined.

Changing Population Totals

Between 1961 and 1966, population growth was experienced by only three of the seven study areas (Areas 3, 4 and 6; Table 33). In Area 3, which was the most active district of redevelopment during this period, population increased at the rate of 25 per cent, from 462 to 580 people. The 13 per cent increase in Area 6 occurred not only as the result of apartment construction, but also because students from the nearby University of Alberta sought rental accommodation in converted dwellings. Only modest growth took place in Area 4. Here, three high rise apartments, occupying over 10 per cent of the total lot area, were under construction when the 1966 census was taken. Thus, growth that had occurred as the result of earlier redevelopment was balanced by the loss of those people who had been the previous occupants of the redeveloped houses.

TABLE 33 — CHANGING POPULATION TOTALS, BY STUDY AREA,
1961-1966

Study Areas	1961	1966	Per Cent Change
1	550	530	- 3.6
2	387	383	- 1.0
3	462	580	+25.3
4	540	549	+ 1.7
5	460	455	- 1.1
6	424	479	+13.0
7	454	452	- .4

Source: Canada, Dominion Bureau of Statistics, Enumeration Area Data Print-out Statements, 1961 and 1966, Ottawa, 1961 and 1966.

The remaining study areas experienced slight population losses of less than 4 per cent. This can partially be explained by the following reasons: reconversion activity (Area 1), changes in family composition (Areas 2 and 5) and the loss of residential land to non-residential uses (Area 7).

Changing Population Densities

To determine the nature of changing population densities in the study areas, the total lot area of all residential uses was calculated for 1961 and 1966 and then divided by the population totals for the same years. The results, which are shown in Table 34, reflect the numerical population changes, but in

TABLE 34 — CHANGING POPULATION DENSITIES, BY STUDY AREA, 1961-1966

Study Areas	1961			1966				
	Residential Lot Area ¹	Acres	Popula- tion	Net Density	Residential Lot Area	Acres	Popula- tion	Net Density
1	900,000	20.9	550	26.3	900,000	20.9	530	25.3
2	735,500	17.1	387	22.5	735,500	17.1	383	22.4
3	580,000	13.5	462	34.2	555,000	12.9	580	45.0
4	644,225	15.0	540	36.0	482,640	11.2	549	49.0
5	404,795	9.4	460	48.9	410,537	9.5	455	47.9
6	483,703	11.2	424	37.9	495,771	11.5	479	41.7
7	673,950	15.7	454	28.9	651,450	15.1	452	29.9

¹Residential lot area is in square feet.

Source: Areal data are from the Assessors Department, City of Edmonton, 1968. Population information is from: Canada, Dominion Bureau of Statistics, Enumeration Area Data Print-Out Statements, 1961 and 1966, Ottawa, 1961 and 1966.

addition show characteristics which the changing population totals fail to reveal. In Area 4, for example, the number of people increased by only nine to 549, but the net population density jumped from 36 to 49 persons per acre. As Table 34 shows, there was a considerable loss of residential land to non-residential uses (3.8 acres), thus accounting for the only modest population gain but the sizeable density increase. A similar situation, but on a smaller scale, also occurred in Area 7. Significant increases in density took place in Areas 3 and 6, but decline was experienced in Areas 1, 2 and 5, where small population losses occurred and redevelopment was negligible.

How has conversion activity, the major feature of structural change prior to 1961, affected population densities? The 22 persons per acre density of Area 2, a predominantly single-family neighbourhood, can be used as an approximate gauge to measure this effect. In general, conversion activity by 1961 had caused densities to rise by about 30 per cent in districts where basement conversions dominated (Areas 1 and 7), and to increase by over 50 per cent in neighbourhoods characterized by converted rooming and boarding houses (Areas 3 and 4).² The considerably higher densities of Areas 5 and 6 in 1961 (49 and 38 persons per acre respectively) can largely be explained because of the small lot size which distinguishes these from the other study areas, and also because conversion was very significant prior to 1961. As demonstrated by the study areas, dwelling conversion has caused marked increases in population density. Redevelopment, in

²These higher densities could also be the result of the occurrence of some smaller lots in these two areas.

turn, has produced still higher densities.

Changing Age and Sex Composition

Because people between the ages of twenty and thirty and over 65 years of age have been cited in the literature as being mainly responsible for the increased demand for rental accommodation,³ it can be expected that the changing demographic pattern of transition areas will show sizeable increases of these particular groups. This is indeed so, particularly for the young adult group. In those areas affected by apartment redevelopment between 1961 and 1966 (Areas 3, 4 and 6), significant increases of males and females between the ages of 15 - 24 have taken place (Figure 17).⁴ In Area 3, for example, the age group 20 - 24 increased from 64 to 155 people, clearly indicating that developers are catering to a younger population. The increased proportion of young adults in the population pyramids of Areas 5 and 6 mainly reflects the influx of university students into these neighbourhoods. As well, the sizeable increase of the 25 - 34 year old male segment in Area 5 can be accounted for by the location of several transient rooming houses along the commercial strip, Whyte Avenue. The increase of people over 65 years of age, however, was found to be less significant

³This literature was discussed in Chapter 1, pp. 4-8.

⁴The census shows the ages 0-25 and 65-69 grouped in five year intervals, while the ages 25-64 are grouped in ten year intervals. Over seventy years is classed as one group. To facilitate comparisons between age groups, ten year intervals have been used in this study, except for the categories 0-14 and 65 years and over. Where particularly significant, increases in five year intervals are given in the text.



than expected. Only Area 4 experienced slight gains. Field investigation revealed that in most areas the occupants of a number of replaced dwellings were older people; thus, the outgoing group of older residents who had occupied the replaced dwellings probably balanced the incoming group of older aged apartment dwellers.

Other significant age and sex composition changes, which are associated with the transition process, include the increased proportion of females to males and the loss of children and middle-aged groups. Area 3 had the largest increase in female population in the age group 20 - 24. The number jumped from 40 in 1961 to 99 in 1966, and probably occurred because this area is very close to the Royal Alexandra Hospital and downtown Edmonton. Area 4, the district closest to the central business district, and Area 6, located less than one-half mile from the University of Alberta campus, also had similar female population increases (Figure 17). Ostensibly, females desire to live very close to their place of work or study. Areas 1 and 2 showed no gains, maintaining nearly the same pyramid shape between 1961 and 1966.

Areas of active apartment redevelopment also experienced losses of children under fifteen years old and, in conjunction, adults between the ages of 35 - 54 (Figure 17). This has happened because apartments have replaced one and two-family houses previously occupied by these population groups. In conclusion, the age-sex pyramid of a residential transition area is characterized by a small base of children under fifteen years old; a large concentration of young adults in the 20 - 34 age group; and lesser but equally proportioned numbers of

people in older age categories.

Changing Household Composition Characteristics

In transition areas, household characteristics have also been altered. Noted below are the most significant changes in marital status, household size, family size and numbers of children per family associated with conversion and redevelopment activities.

1) Marital Status. Areas of apartment redevelopment are characterized by increasing proportions of single people over fifteen years of age, particularly females. In Area 3 between 1961 and 1966, the number of unattached adults rose by almost 50 per cent from 106 to 156 people. Females accounted for over 65 per cent of this increase. Similarly, in Area 4, the total number of single people in 1966 stood at 230, compared to 160 five years before. Areas 5 and 6, already noted as being strongly influenced by the University of Alberta, also gained more single people. However, two areas of conversion activity, located in newer districts, did not show appreciable increases of single people (Areas 1 and 7). In most study areas, the number of married couples remained approximately the same between 1961 and 1966, although there were modest gains in Areas 3 and 6 and slight losses in Area 4.

2) Household Size.⁵ In the centrally located, inner-city transition areas, the

⁵According to the census, a household consists of a person or group of people occupying one dwelling. Canada, Dominion Bureau of Statistics, Population and Housing Characteristics, by Census Tract, Edmonton, 1961, Ottawa, Queen's Printer, 1963, p. 16.

increase of single people has resulted in an accompanying decline in household size. In Areas 3 and 4, the average household size dropped from 2.6 persons to 2.2 and 2.0 persons respectively. These figures were well below the 1966 city average of 3.5 persons per household. In the more recently established conversion areas (Areas 1 and 7), the average household size remained quite close to the city average. In Area 1 during the study period, it remained static at 3.6 persons, while in Area 7 it changed slightly from 3.3 to 2.9 persons.

3) Family Size and Numbers of Children Per Family.⁶ Trends in family size were almost identical to the changes in household size. In areas of apartment redevelopment, the average family size stood well below the city average. The 1966 city average of 3.8 persons per family can be contrasted to the 2.6 average which characterized Areas 3, 4 and 6. These same areas also scored well below the city average with respect to numbers of children per family, having less than one, compared to Edmonton's average of 1.9 children per family. Again, areas of conversion activity in newer districts (Areas 1 and 7) displayed figures very close to the city average. Apparently, although older, inner-city and newer areas located further from the central business district display fairly similar trends in age-sex composition, numerical and density changes, distinct spatial differences exist for changing household characteristics. Field work also revealed that more young couples with children live in apartments in those transition areas

⁶A family consists of a husband and wife (and children if there are any) who live together in the same dwelling. Ibid.

located in newer surroundings (Areas 1, 2 and 7), whereas more childless couples reside in inner-city apartment districts (Areas 3 and 4).

CHANGING LABOUR FORCE CHARACTERISTICS

The 1966 Census of Canada did not collect information on labour force characteristics, thus making comparisons between 1961 and 1966 census data impossible. Even if the required information had been available, labour force data collected at the enumeration area level are subject to a great deal of response variance, with the result that conclusions reached at this areal level must be considered very general.⁷ In an attempt to determine the present occupational status of each area's population, and thus note changes since the 1961 census, the questionnaire survey carried out for this study collected information on labour force characteristics. But, because of the likelihood of similar response variance with this data, only generalized conclusions can be formed.

The findings of the questionnaire survey, nevertheless, coincide with the conclusions reported in several other studies of apartment residents. McAfee, for instance, in her examination of apartment development in the West End of Vancouver, reported a significant influx of white-collared workers—professional, managerial and clerical staff—into this district.⁸ Similar trends

⁷Canada, Dominion Bureau of Statistics, Statement on the Nature and Extent of Variance Associated with EA Census Statistics, Ottawa, 1961, p. 1.

⁸R. McAfee, Residence on the Margin of the Central Business District: A Case Study of Apartment Development in the West End of Vancouver, B. C., Unpublished M. A. thesis, University of British Columbia, Vancouver, 1967, 133 pp.

have occurred in the study areas, particularly in Areas 3 and 4, where the number of professional people increased from less than 20 per cent of the labour force to just over 40 per cent between 1961 and 1968. This undoubtedly reflects the close proximity of these areas to the downtown business core of Edmonton. Area 6, close to the University of Alberta, also showed an increased proportion of professional people in the same period. Although there were fewer responses from apartment dwellers in the newer Areas 1, 2 and 7, the same pattern seems to prevail in these outlying districts. These conclusions, therefore, although tentative, complement the findings that have been obtained in other cities. Further study would be worthwhile to determine if there are spatial variations between the labour force characteristics of inner-city transition areas and those located further away from the central business district, and also to determine precisely if there are differences between the occupants of walk-up and high rise apartments.

CHANGING OCCUPANCY CHARACTERISTICS

High rates of population mobility, which can be explained by several factors, characterize transition areas of active apartment construction.⁹ Because there is a greater proportion of rental housing units than owner-occupied dwellings, transition areas tend to cater to a transient population that is seeking

⁹When surveyed in the fall of 1968, approximately 45 per cent of the 350 respondents to the questionnaire survey were planning to move within one year.

only temporary accommodation. In addition, the removal of one and two-family houses has forced many families to move, while the fear of apartment encroachment into their neighbourhoods has caused still other people to seek residences elsewhere. In contrast, though, transition areas are also distinguished by a core of long-time residents who, to date, have resisted change by refusing to sell their houses to apartment developers. Using data obtained from the questionnaire study, this section examines the changing occupancy characteristics associated with transitional neighbourhoods.

Length of Occupancy by Dwelling Type

1) Single-Family Houses. More occupants of this dwelling type, as might be expected, have resided longer in the same residence than the occupants of the other types. For all areas, 55 per cent of the single-family homes have been occupied for more than ten years (Table 35). Only one-quarter of the single-family respondents were less than two year occupants. Cross-checking of questionnaires revealed that many of these short-time residents rented their homes. Spatially, the newer study areas (Areas 1, 2 and 7) have the longest occupancy rates, while the older districts (Areas 3, 4, 5 and 6) have the highest turn-over of residents (Table 35).

2) Converted Dwellings. Converted dwellings have higher turn-over rates than single-family houses, even though one-third are owner-occupied. Forty-two per cent of the 71 converted dwelling respondents have lived in their residence for less than one year, while only 13 per cent were more than ten year occupants.

TABLE 35 — LENGTH OF OCCUPANCY, BY DWELLING TYPE
AND STUDY AREA

Length of Occupancy	Single- Family		Converted Dwellings		Apartments	
	No.	%	No.	%	No.	%
ALL AREAS						
Less than 1 year	16	11.1	30	42.4	51	52.0
1 to 2	16	11.1	10	14.1	28	28.7
2 to 3	6	4.2	8	11.2	6	6.1
3 to 5	8	5.6	10	14.1	7	7.1
5 to 10	19	13.2	4	5.8	2	2.0
Over 10 years	79	54.8	9	12.6	4	4.1
Total	144	100.0	71	100.0	98	100.0
AREA 1						
Less than 1 year	-	-	3	30.0	4	100.0
1 to 2	4	13.3	1	10.0	-	-
2 to 3	1	3.3	1	10.0	-	-
3 to 5	-	-	1	10.0	-	-
5 to 10	5	16.7	-	-	-	-
Over 10 years	20	66.7	4	40.0	-	-
Total	30	100.0	10	100.0	4	100.0
AREA 2						
Less than 1 year	3	10.0	1	100.0	4	100.0
1 to 2	1	3.3	-	-	-	-
2 to 3	2	6.7	-	-	-	-
3 to 5	3	10.0	-	-	-	-
5 to 10	4	13.3	-	-	-	-
Over 10 years	17	56.7	-	-	-	-
Total	30	100.0	1	100.0	4	100.0
AREA 3						
Less than 1 year	3	37.5	3	50.0	5	31.2
1 to 2	1	12.5	-	-	5	31.2
2 to 3	-	-	-	-	2	12.5
3 to 5	-	-	-	-	4	25.0
5 to 10	1	12.5	2	33.3	-	-
Over 10 years	3	37.5	1	16.7	-	-
Total	8	100.0	6	100.0	16	100.0

TABLE 35 — CONTINUED

Length of Occupancy	Single- Family		Converted Dwellings		Apartments	
	No.	%	No.	%	No.	%
AREA 4						
Less than 1 year	2	20.0	1	8.3	13	36.1
1 to 2	-	-	2	16.7	16	44.4
2 to 3	1	10.0	3	25.0	1	2.8
3 to 5	-	-	3	25.0	1	2.8
5 to 10	2	10.0	-	-	2	5.6
Over 10 years	5	50.0	3	25.0	3	8.3
Total	10	100.0	12	100.0	36	100.0
AREA 5						
Less than 1 year	-	-	3	25.0	4	80.0
1 to 2	4	40.0	1	8.3	-	-
2 to 3	1	10.0	1	8.3	1	20.0
3 to 5	2	20.0	1	8.3	-	-
5 to 10	-	-	1	8.3	-	-
Over 10 years	3	30.0	5	41.8	-	-
Total	10	100.0	12	100.0	5	100.0
AREA 6						
Less than 1 year	5	20.8	14	51.9	3	18.8
1 to 2	3	12.5	3	11.1	13	81.2
2 to 3	1	4.2	3	11.1	-	-
3 to 5	4	16.7	2	7.4	-	-
5 to 10	2	8.3	1	3.7	-	-
Over 10 years	9	37.5	4	14.8	-	-
Total	24	100.0	27	100.0	16	100.0
AREA 7						
Less than 1 year	3	11.1	4	33.3	10	76.9
1 to 2	2	7.4	3	25.0	3	23.1
2 to 3	-	-	-	-	-	-
3 to 5	1	3.7	2	16.7	-	-
5 to 10	3	11.1	-	-	-	-
Over 10 years	18	66.7	3	25.0	-	-
Total	27	100.0	12	100.0	13	100.0

Source: Questionnaire Survey, 1968.

The University of Alberta district (Area 6), reflecting the seasonal mobility patterns of students, has the highest one year turn-over rate (52 per cent; Table 35). And, although the evidence is not conclusive because of the small number of respondents, converted dwellings in the newer study areas (Areas 1 and 7) tend to have longer occupancy records, even when renter-occupied.

3) Apartments. Residents of apartment houses have the highest mobility rates. Fifty-two per cent of the 98 apartment respondents have occupied their suites for less than one year, and another 29 per cent have been residents for only two years (Table 35). This high percentage of short-time residents probably reflects, to some extent, the fact that apartments have only located in the study areas very recently. Nevertheless, in Areas 3 and 4, where apartments have attracted tenants since the early 1960s, the turn-over of apartment dwellers is still quite high. In these two areas, 60 and 80 per cent of the respondents were less than two year occupants (Table 35).

Length of Occupancy of Owner and Renter-Occupied Dwellings

There are significant differences between the occupancy patterns of owner-occupied and renter-occupied dwellings which the previous discussion alluded to but did not fully reveal. Seventy-three per cent of the surveyed owner-occupied dwellings have been lived in for more than ten years (Table 36). This high proportion and the corresponding lack of short-time residents is the result of two interacting factors. First, there is a core of people in each study area who have resisted change, turning down offers of purchase from developers,

TABLE 36 — LENGTH OF OCCUPANCY OF OWNER AND RENTER-OCCUPIED DWELLINGS, FOR ALL AREAS

Length of Occupancy	Owner-Occupied		Renter-Occupied	
	No.	%	No.	%
Less than 1 year	4	2.9	93	45.1
1 to 2	6	4.3	53	25.7
2 to 3	4	2.9	20	9.7
3 to 5	4	2.9	23	11.2
5 to 10	20	14.4	8	3.9
Over 10 years	101	72.6	9	4.4
Total	139	100.0	206	100.0

Source: Questionnaire Survey, 1968.

primarily because they have lived in their neighbourhood for a long time and enjoy the advantages it possesses.¹⁰ Second, the lack of new owner-occupiers largely reflects the fact that potential homeowners are uncertain about buying a family home in areas marked by considerable structural change, and also because housing in transition areas possesses inflated, speculative values which most buyers cannot afford.

¹⁰Results of the questionnaire survey showed that of a total of 116 homeowners who had been approached by developers wanting to buy their houses, only 4 per cent agreed to sell, 30 per cent were considering selling and 66 per cent definitely refused. The reasons cited for refusal included: enjoy advantages of neighbourhood (60 per cent); long length of residence (55 per cent); and intended buyer did not offer enough money (28 per cent).

Renter-occupied dwellings have entirely opposite occupancy patterns to those of owner-occupied dwellings, having a very high turn-over of people. For all areas, 70 per cent of the rental units (apartment and converted suites) have been occupied for less than two years, and 90 per cent for less than five years (Table 36). This clearly reflects the transient nature of the population that resides in transition areas.

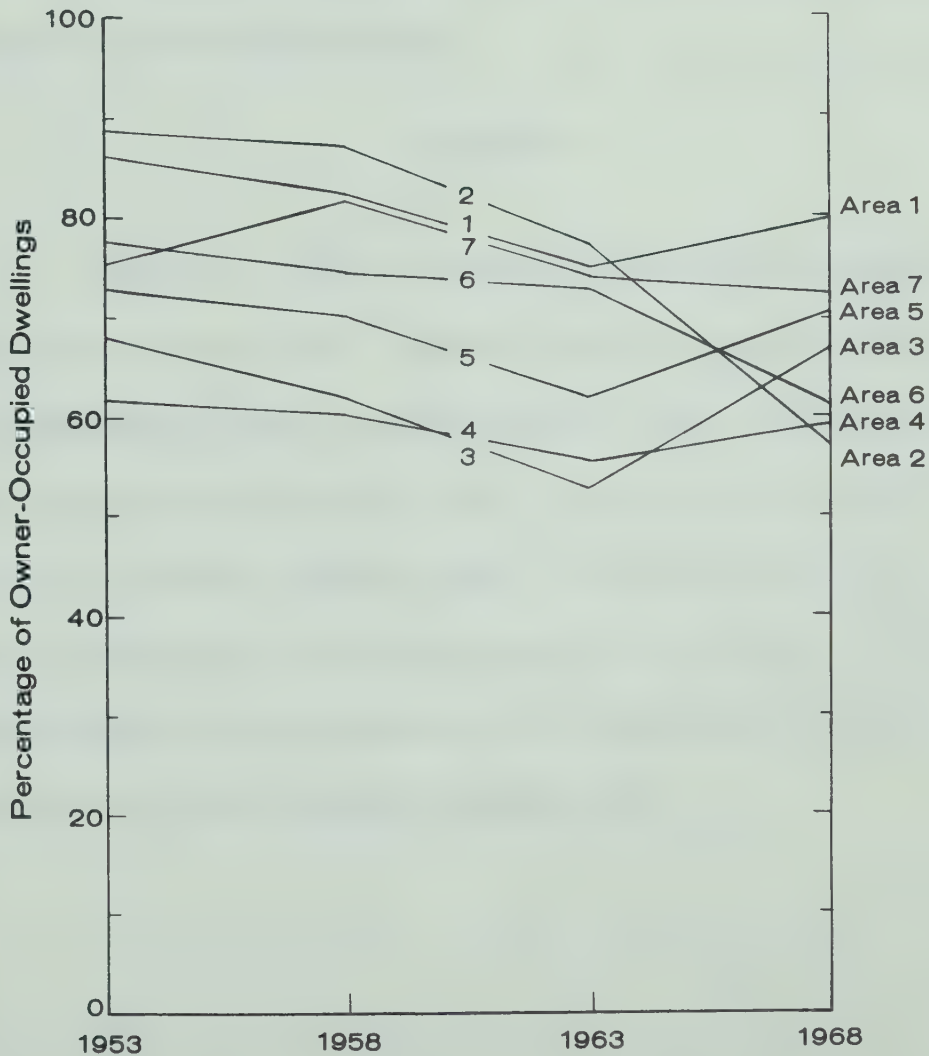
Owner and Renter Occupancy Characteristics Through Time¹¹

Through time, two trends have emerged which concern the ratio of owner-occupied to renter-occupied dwellings. Prior to intensive redevelopment in the study areas, a decreasing proportion of houses were occupied by their owners, reflecting the absentee ownership of converted dwellings as well as other dwellings being held for speculative purposes. But, after apartments located in a neighbourhood, the proportion of owner-occupied houses again increased. Area 3 illustrates this pattern very well. In 1953, 68 per cent of all dwellings were owner-occupied (Figure 18). This ratio declined to 62 per cent in 1958 and then to 53 per cent in 1963, immediately before the peak of redevelopment but at the height of conversion activity. But, by 1968, following the peak of structural change, the owner-occupied proportion had again climbed to 65 per cent. This increase is probably due to the core of residents in this area who have resisted change, maintaining the ownership and occupancy

¹¹This discussion focuses only on the ownership characteristics of single-family and converted dwellings.

OWNERSHIP TRENDS IN TRANSITION AREAS

Single-Family and Converted Dwellings



Source: Assessors Department,
City of Edmonton,
1968

of their homes. Several areas, however, have yet to experience a reversal of the downward trend. In Area 2, for example, the proportion of owners to renters was still declining in 1968 (Figure 18), but redevelopment in this area is only now (summer 1969) reaching its peak of intensity. Because many of the dwellings currently being replaced in this area are renter-occupied, it can be expected that the downward trend will be reversed, thus showing an increased proportion of owner-occupied dwellings.

SUMMARY

Significant changes in population structure have accompanied functional and structural change. Population densities and totals have increased, as has the proportion of young, unattached adults to older, married people. These changes, which are more prevalent in older, inner-city transition areas than in newer districts, have also resulted in more white-collared people taking up residences and in high rates of occupancy turn-over. Nevertheless, there still remains in each area a core of homeowners who are reluctant to relinquish long established ties with their homes and neighbourhoods.

Chapter VII

CONCLUSION: A DESCRIPTIVE MODEL OF RESIDENTIAL CHANGE

INTRODUCTION

On the basis of the findings of this thesis, it is possible to devise a descriptive model consisting of the causes, location and sequential development of residential areas in transition that are characterized by conversion and redevelopment activities.¹ In doing so, the main conclusions of this study can be incorporated. This model has three components, two static and one dynamic. The static components include: first, the causes of residential change and the resulting formation of transition areas; and second, the location of residential change and transition areas. The dynamic component—the most significant feature of the model—is concerned with processes of functional, structural and population change and the evolutionary sequence of transition area development.

CAUSES OF RESIDENTIAL CHANGE AND THE FORMATION OF TRANSITION AREAS

The causes of residential change are many and complex. It is possible, though, to determine certain economic, geographic, political, social

¹"A model is thus a simplified structuring of reality which presents...significant features or relationships in a generalized form." P. Haggett and R. J. Chorley, "Models, Paradigms and the New Geography," Models in Geography, eds. P. Haggett and R. J. Chorley, London, Methuen, 1967, p. 22.

and technological factors which have led to dwelling conversion and apartment redevelopment, and hence to the formation of residential transition areas. The basic cause appears to be an expanding population base, segments of which—particularly young, single people and young, newly married couples between the ages of twenty and thirty—cannot afford or do not desire to own their own houses and, as a result, demand rental accommodation. Combined with this rising demand are improving technologies which have made it possible to build apartments quickly, efficiently and economically; desires by people for the capital gain which can be accrued from building or owning a "speculative" apartment; aging and filtering down of housing which often lead to dwelling conversion or deterioration and redevelopment; changing housing preferences which now favour living close to places of work and shopping, transportation and cultural facilities in order to overcome distances and "costs of friction;" and finally, public policies which support urban renewal and high density, central-city living. These factors do not work in isolation but contribute significantly to effect change by interacting with each other.

LOCATION OF RESIDENTIAL CHANGE AND TRANSITION AREAS

Although the residential structure of the whole city, to a certain extent, is changing, it is possible to readily discern certain areas where conversion and redevelopment are taking place. It is in these areas where functional, structural and population change is present and most significant, and hence where definitive transition areas can be distinguished.

As revealed by this study, dwelling conversion is found mainly throughout that part of Edmonton which was built-up by 1945. In particular, and as suggested by several classical theories of urban growth and structure (the concentric zone, sector and multiple-nuclei concepts), it is located in areas close to the central business district, along or near major arterials which lead into this core, and adjacent to other functional growth points in the city such as the Strathcona business centre and the University of Alberta. Conversion activity diminishes in intensity as distance from these points increases.

Because the aforementioned theories of urban structure were devised before large-scale apartment redevelopment took place, they do not account for the city-wide distribution of apartment construction which now characterizes many cities. Only Hoyt's sector concept mentions the fact that high rise, luxury apartments sometimes locate in fashionable single-family neighbourhoods immediately adjacent to the central business district. Evidence gathered for this study, nevertheless, shows that apartment redevelopment frequently coincides with districts of conversion activity, although, certainly, not all conversion areas are as yet characterized by apartment construction. Like conversion activity, therefore, apartment redevelopment in Edmonton is located in older parts of the built-up central city, adjacent to the central business district, near functional growth points (such as the University of Alberta, the Northern Alberta Institute of Technology and the Strathcona and Jasper Place business centres), and along or near major arterials which lead into the city centre and other growth points. In addition, though, redevelopment is located in areas commanding splendid

views or possessing positive environmental amenities, as along the North Saskatchewan River valley.

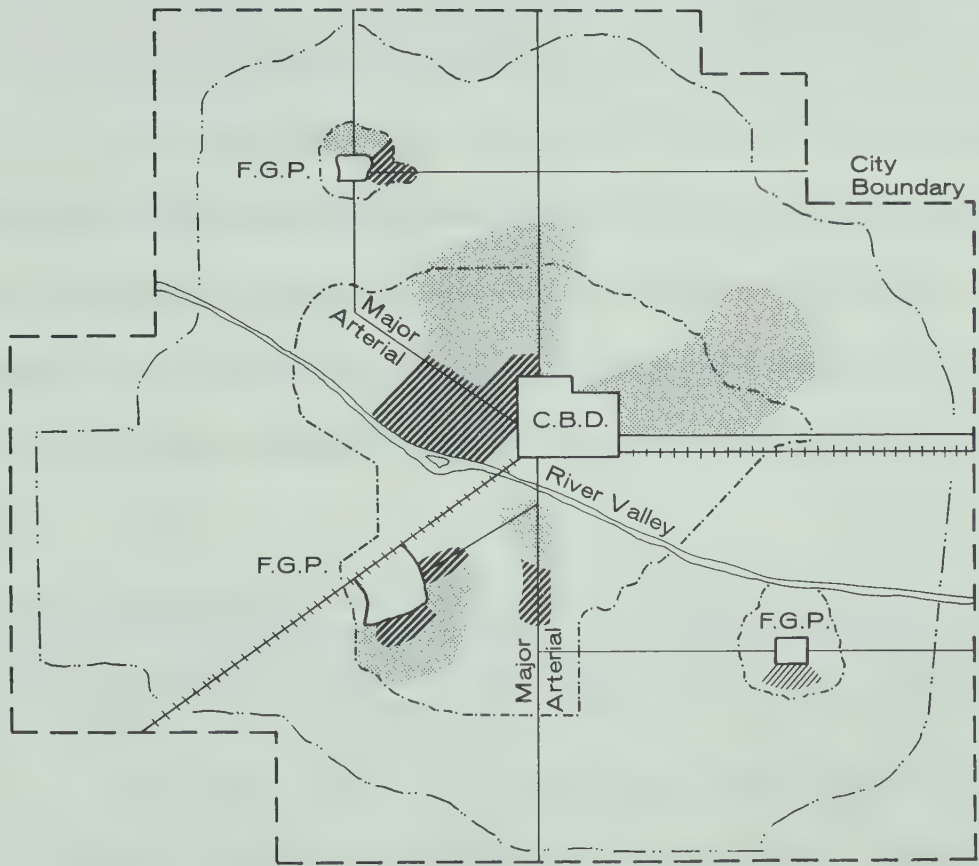
A schematic diagram showing those areas of a city which might possess transitional characteristics (dwelling conversion, apartment redevelopment, or both together) is presented in Figure 19. Although this representation must be considered tentative because it is based on the findings of this Edmonton study, it does seem to coincide with observations made in several other Canadian cities.² Residential areas in transition, therefore, can most likely be found in older established sections of a city, near the central business district and functional growth points, along or near major arterials, and in areas of excellent environmental amenities overlooking, for example, a river valley, lake or ocean.

THE SEQUENTIAL DEVELOPMENT OF TRANSITION AREAS

The most significant aspect of this descriptive model of residential change is its dynamic component, and is concerned with processes of change and the sequential development of transition areas. Before specifically describing this component, however, it is useful to briefly discuss another model of neighbourhood evolution. Devised by Hoover and Vernon as a result of their study of the New York Metropolitan Region, this model comprises five stages and can be

²These include field observations in Victoria and Vancouver, British Columbia and Calgary, Alberta and written statements on Vancouver, Calgary, Toronto and several other Canadian cities (see Chapter 2, pp. 31-32).

THEORETICAL LOCATION of RESIDENTIAL TRANSITION AREAS



Residential Transitional Characteristics

- Conversion Activity
- Apartment Redevelopment
- Conversion and Redevelopment

Boundary of Older Residential Areas - - - - -
Boundary of Present Residential Area - - - - -

Functional Growth Point
F. G. P.

compared to the development of the seven study areas.³

Hoover and Vernon's Model of Neighbourhood Evolution

- 1) "There is an initial stage of residential development in single-family houses."
- 2) "A transition stage, in which there is substantial new construction and population growth in the area, but in which a high and increasing proportion of the new housing is apartments, so that average density is increasing. Much of the apartment construction replaces older single-family houses."

As envisaged by Hoover and Vernon, therefore, initial settlement is followed by a transition period characterized by multi-family construction. In Edmonton, only Area 2 corresponds somewhat to this order of development. Although there were several apartments built in Areas 4 and 6 shortly after initial settlement, they were isolated developments and do not constitute a transitional stage.

- 3) "A down-grading stage, in which old housing (both multi-family and single) is being adapted to greater-density use than it was originally designed for. In this stage there is usually little actual construction, but there is some population and density growth through conversion and crowding of existing structures."

In contrast to Hoover and Vernon's model, residential conversion has occurred prior to apartment redevelopment in the study areas. Although these authors note that "...in the down-grading stage...the replacement of single-family houses by apartment houses (can occur) at the same time that other structures are being sub-divided," there was almost no conversion activity in the

³E. M. Hoover and R. Vernon, Anatomy of a Metropolis, New York, Doubleday, 1959, pp. 183-198. The following direct quotations are taken from these pages.

study areas during the stage of intensive apartment redevelopment. Thus, there is no overlapping but a definite reversal in the sequence of occurrence of stages two and three.

4) "A thinning-out stage, in which density and dwelling occupancy are gradually reduced... (as the result of) decline in household size, vacancy, abandonment and demolition. This stage is characterized by little or no residential construction and by decline in population."

5) "A renewal stage, in which obsolete areas of housing, after arriving at stage 4, are being replaced by new multi-family housing. Population densities may not change."

Thinning-out and renewal, which refer to the development and subsequent clearance of areas of slum housing, have not occurred in the study areas (or in Edmonton to any large extent), primarily because of the youthfulness of Edmonton's housing stock as compared to the oldness of New York's.

There is, therefore, general disagreement with Hoover and Vernon's concept of neighbourhood evolution. This is probably due to the difference in size and age of New York and Edmonton, and also because Hoover and Vernon devised their model in 1956, before intensive apartment redevelopment took place in most Canadian and American cities.

A Suggested Sequence of Transition Area Development

Rather than five stages, the sequential development to date of the seven study areas can be divided into three stages: (1) a period of initial single-family development; (2) a period characterized by dwelling conversion; and (3) a period of apartment redevelopment.

1) A Period of Initial Single-Family Development. As shown by Table 37,

TABLE 37 — STAGES OF TRANSITION AREA DEVELOPMENT AND DATES OF OCCURRENCE

Stages of Development	1	2	3	4	5	6	7
Study Areas and Dates of Occurrence							
1. Single-family development ¹	1945	1945	1925	1925	1945	1945	1945
2. Dwelling conversions	1940s	no ²	1920s	1920s	1940s	1940s	1940s
	-		-	-	-	-	-
	1968		1963	1963	1965	1965	1966
3. Apartment redevelopment	1967	1967	1958	1957	1962	1964	1965
	-	-	-	-	-	-	-
	1968	1968	1968	1968	1968	1968	1968

¹Development is achieved when over 75 per cent of the area is built-up.
²Of 101 single-family houses built in this area, only two were converted.
Source: Assessors Department, City of Edmonton, 1968.

five of the seven study areas were not built-up until 1945 (over 75 per cent areal development). Areas 3 and 4, in contrast, were established as early as the 1920s. This time difference, however, has facilitated studying the effect of time on neighbourhood development. In this initial stage, there is no functional or structural change (although filling-in of vacant lots by additional single-family houses may occur). There are, though, population changes in the sense that families move into and out of a neighbourhood. Dwellings age and some may fall into disrepair.

2) A Period of Dwelling Conversion. As determined by this study, conversion activity plays a significant role in transitional processes, and has preceded redevelopment in six of the seven study areas (Table 37). Conversion activity has not taken place in Area 2 primarily because the house types, a very important factor in dwelling conversion, are generally unsuitable for modification in this area. During this second stage, then, functional change is marked by multi-family land use succeeding single-family land use, while structural change occurs in the form of dwellings being altered to contain more living units.

An area does not have to age considerably before conversion will occur. In the older established study areas, located near the central business district (Areas 3 and 4), conversion first took place in the late 1920s and early 1930s. Dwellings converted were between twenty and thirty years old. In the newer study areas, located several miles from the central business district (Areas 1 and 7), dwelling conversion began in the 1940s, shortly after their initial development (Table 37). Many houses when subdivided in these

two areas were less than ten years old.

Various population changes accompany the functional and structural change caused by conversion activity. There is a tendency for filtering down of housing to take place and for more people of lower income status to reside in conversion areas. Population totals and densities increase, especially in those areas close to the central business district or functional growth points. As well, the number of young, unattached adults may become more sizeable. However, household composition characteristics, including family size and numbers of children per family, may not change, and if they do, it is only very slightly. And, reflecting the rental housing character of transition areas, the proportion of owner-occupied dwellings decreases while population mobility increases.

3) A Period of Apartment Redevelopment. The most easily identifiable and significant functional, structural and population changes have occurred as the result of redevelopment. In the early phases of this stage, while land costs are still relatively inexpensive, low density forms of redevelopment such as duplexes sometimes precede apartments. Regardless of the form of redevelopment, older properties, dwellings in poor condition, single-family residences and vacant lots are mainly sought as the sites for development projects. Dwelling conversion may continue into the early phases of redevelopment, but once apartment construction becomes intensified, conversion activity ceases almost entirely. Re-conversion of dwellings, though, may still continue. As the redevelopment process continues and only apartments are constructed, newer houses, houses in good

condition and converted dwellings are in turn replaced. Large lots are still sought for siting apartments, although smaller properties may now be included in land assembly parcels. Many replaced residences are renter-occupied, largely reflecting the speculative value attached to transition area housing.

The population structure of a transition area is greatly altered during this third stage. Population totals and densities increase even more than they did during the period of conversion activity. Household composition characteristics are greatly changed, as more young people, both single and married, replace families with children who have been forced to move to make way for apartment developments. As a result, household and family size averages are reduced. In addition, an increased proportion of professional workers take up residences in newly constructed apartment units. Occupancy characteristics become distinguished by many short-time residents, although a core of long-time homeowners, reluctant to sell and leave familiar surroundings, continues to occupy houses in transition areas. Thus, as the result of dwelling conversion and apartment redevelopment, the land use patterns, building stock and population characteristics of once predominantly single-family neighbourhoods are greatly altered and restructured.

Although valid for the transition areas examined, this descriptive model of residential change, which incorporates the causes, location and sequential development of residential transition areas, requires further testing in other transition areas to determine if it is, indeed, a valid generalization of residential change and transition area development.

IMPLICATIONS OF THE STUDY AND SUGGESTIONS FOR FURTHER RESEARCH

This study has both theoretical and practical implications and has opened additional avenues of research. A descriptive model of residential change, with an emphasis on processes of change, has been suggested. Because this model applies quite successfully to different parts of Edmonton, it appears to have a certain amount of validity. However, it requires further testing in other transition areas, preferably in other cities, different in size and age to Edmonton. Factors causing residential change need to be examined in greater depth, while more sophisticated statistical techniques, such as multiple regression analysis,⁴ should be applied to the location of apartment redevelopment and transition areas.

Assessment records, containing detailed property characteristics, provide a wealth of information for urban research that has remained largely untapped to date. Although data collection can be time consuming and difficult, the results produced are invaluable, providing insights into the nature of urban change otherwise impossible to obtain. In this study, assessment information has been applied specifically to an examination of residential transition areas, but this data source could, and should, be used to analyze change in transition areas of commercial, industrial or mixed land uses.

⁴See for example the recent article by L. S. Bourne, "Location Factors in the Redevelopment Process: A Model of Residential Change," Land Economics, vol. 45 (February 1969), pp. 183-193.

This study has tried to help fill a void in urban research—the lack of studies of processes of change. By examining change in the three principle components of residential structure—land use, housing stock and population patterns—a more complete picture of neighbourhood development has been achieved. Such a picture is useful to urban planners because, with a greater understanding of the nature of urban change, decision making and the planning process can be assisted. For example, although redevelopment does seek out and replace older and obsolete properties, it locates primarily in areas of good housing quality. Realizing this, planners should provide additional incentives to encourage redevelopment in older areas of the city where poorer housing conditions exist. As well, knowledge of changing population characteristics has important school planning implications, and realization that house types largely govern conversion activity can influence the planned location of conversion areas.

This thesis, like many other studies, has indicated the need for additional research. Foremost, there is a tremendous gap in the knowledge of the dynamic aspect within the city. If further research on the city is to contribute to an understanding of growth and future patterns, it must focus on changes in time, and studies of processes of change can provide this needed information. The contributions of this study to the analysis of urban change can be considerably extended in future studies.

BIBLIOGRAPHY

- Ackermann, E. A. Geography as a Fundamental Research Discipline. Research Paper No. 58, Department of Geography, University of Chicago, 1958, 37 pp.
- Adamson, A. P. C. "Form and the Twentieth Century Canadian City," Queen's Quarterly, vol. 69 (Spring 1962), pp. 49-68.
- Alonso, W. Location and Land Use: Toward a General Theory of Land Rent. Cambridge, Massachusetts, Harvard University Press, 1964, 204 pp.
- _____. "The Historic and the Structural Theories of Urban Form: Their Implications for Urban Renewal," Land Economics, vol. 40 (May 1964), pp. 227-231.
- Anderson, T. R. "Social and Economic Factors Affecting the Location of Residential Neighbourhoods," Papers and Proceedings of the Regional Science Association, vol. 9, 1962, pp. 161-170.
- Bailey, M. J. "Effects of Race and Other Demographic Factors on the Values of Single-Family Houses," Land Economics, vol. 42 (May 1966), pp. 215-220.
- Bank of Montreal. "The Housing Market," Bank of Montreal Business Review (May 1963), 4 pp.
- Bank of Nova Scotia. "Apartment Boom in Canada," Monthly Review (October 1965), 4 pp.
- Barlowe, R. Land Resource Economics. Englewood Cliffs, N. J., Prentice-Hall, 1958, 585 pp.
- Blumenfeld, Hans. "The Tidal Wave of Urban Expansion," Journal of the American Institute of Planners, vol. 20 (February 1954), pp. 3-14.
- Bogue, D., ed. Needed Urban and Metropolitan Research. Scripps Foundation Studies in Population Distribution, No. 7, Oxford, Ohio, Miami University, 1953, 88 pp.
- Boskoff, A. The Sociology of Urban Regions. New York, Appleton-Century Crofts, 1962, 370 pp.

Bourne, L. S. Private Redevelopment of the Central City. Research Paper No. 112, Department of Geography, University of Chicago, 1967, 199 pp.

_____. "Comments on the Transition Zone Concept," The Professional Geographer, vol. 20 (September 1968), pp. 313-316.

_____. "Market, Location, and Site Selection in Apartment Construction," The Canadian Geographer, vol. 12 (Winter 1968), pp. 211-226.

_____. "Location Factors in the Redevelopment Process: A Model of Residential Change," Land Economics, vol. 45 (February 1969), pp. 183-193.

Breger, C. E. "The Concept and Causes of Urban Blight," Land Economics, vol. 43 (November 1967), pp. 369-376.

Brigham, E. F. "The Determinants of Residential Land Values," Land Economics, vol. 41 (November 1965), pp. 325-334.

Burgess, E. W. "The Growth of the City: An Introduction to a Research Project," The City, eds. R. E. Park et al., Chicago, University of Chicago Press, 1925, pp. 47-62.

Broek, J. O. M. and J. W. Webb. A Geography of Mankind. New York, McGraw-Hill, 1968, 527 pp.

Canada, Department of Mines and Technical Surveys. The Atlas of Canada. Ottawa, Queen's Printer, 1957.

Canada, Department of Trade and Commerce. Edmonton Housing Atlas. Ottawa, King's Printer, 1945, 8 pp.

Canada, Dominion Bureau of Statistics. Eighth Census of Canada, 1941, Population, vol. I. Ottawa, King's Printer, 1946.

_____. Enumeration Area Data Print-Out Statements, Edmonton, 1961. Ottawa, 1961.

_____. Statement on the Nature and Extent of Variance Associated with E. A. Census Statistics. Ottawa, 1961, 2 pp.

_____. Population and Housing Characteristics by Census Tracts, Edmonton, 1961. Ottawa, Queen's Printer, 1963, 18 pp.

- _____. Enumeration Area Data Print-Out Statements, Edmonton, 1966. Ottawa, 1966.
- _____. Population and Housing Characteristics by Census Tracts, Edmonton, 1966. Ottawa, Queen's Printer, 1967, 20 pp.
- Carey, G. W. "The Regional Interpretation of Manhattan Population and Housing Patterns Through Factor Analysis," Geographical Review, vol. 56 (October 1966), pp. 551-569.
- Central Mortgage and Housing Corporation. Housing and Urban Growth in Canada. Ottawa, 1956, 32 pp.
- _____. Canadian Housing Statistics. Ottawa, 1968, 104 pp.
- Chapin, F. S., Jr. "Selected Theories of Urban Growth and Structure," Journal of the American Institute of Planners, vol. 30 (January 1964), pp. 51-58.
- _____. Urban Land Use Planning. Second edition. Urbana, Illinois, University of Illinois Press, 1965, 498 pp.
- Chinitz, B., ed. City and Suburb: The Economics of Metropolitan Growth. Englewood Cliffs, N. J., Prentice-Hall, 1964, 181 pp.
- Chorley, R. J. and P. Haggett, eds. Frontiers in Geographical Teaching. London, Methuen, 1965, 378 pp.
- _____. Models in Geography. London, Methuen, 1967, 816 pp.
- _____. "Models, Paradigms and the New Geography," Models in Geography, eds. R. J. Chorley and P. Haggett, London, Methuen, 1967, pp. 19-42.
- City of Edmonton, Planning Department. A Review of Residential Zoning Within Edmonton With Recommendations. 1954, 27 pp. (Mimeographed.)
- _____. Draft General Plan for the City of Edmonton, Part III, Land Uses, Generalized Land Use Plans. vol. I, 1963, n. p.
- _____. A Study of the City of Edmonton. 1964, 34 pp.

- _____. Zoning Bylaw No. 2135. 1964,
n. p.
- _____. Land Use Classification Guide.
1966, n. p. (Mimeographed.)
- _____. General Plan. 1967, 170 pp.
- _____. Outline History of Illegal Suites.
1968, 8 pp. (Mimeographed.)
- Clark, W. A. V. The Dynamics of Rental Housing Areas in the United States Central Cities. Unpublished Ph.D. dissertation, University of Illinois, Urbana, 1964, 134 pp.
- Colby, C. C. "Centrifugal and Centripetal Forces in Urban Geography," Readings in Urban Geography, eds. H. M. Mayer and C. F. Kohn, Chicago, University of Chicago Press, 1959, pp. 287-298.
- Colean, M. Renewing Our Cities. New York, The Twentieth Century Fund, 1953, 181 pp.
- Davie, M. R. "The Pattern of Urban Growth," Studies in Human Ecology, ed. G. A. Theodorson, New York, Harper and Row, 1961, pp. 77-92.
- Demarino, G. "Apartment Developers Battle Over Development Plan," The Edmonton Journal, May 5, 1967, p. 30.
- Dickinson, R. E. City, Region and Regionalism. London, Routledge and Kegan Paul, 1947, 455 pp.
- Duncan, B. and P. M. Hauser. Housing a Metropolis: Chicago. Glencoe, Illinois, The Free Press, 1960, 242 pp.
- Eckersberg, A. K. "Housing for the Elderly," Appraisal Journal, vol. 30 (October 1962), pp. 523-534.
- Economic Council of Canada. Fourth Annual Review. Ottawa, Queen's Printer, 1967, 281 pp.
- Fellman, J. D. "Pre-Building Growth Patterns in Chicago," Annals, American Association of Geographers, vol. 47 (March 1957), pp. 59-82.
- Firestone, O. J. Residential Real Estate in Canada. Toronto, University of Toronto Press, 1951, 514 pp.

Fisher, E. M. and R. M. Fisher. Urban Real Estate. New York, Henry Holt, 1954, 412 pp.

Fowke, C. "Why the Surge in Apartment Building?," Canadian Builder, vol. 13 (July 1963), pp. 28-31.

_____. "The Slipform Method: A New System for Apartment Building in Canada," Canadian Builder, vol. 13 (September 1963), pp. 40-42.

_____. "Survey '66 Apartments," Canadian Builder, vol. 16 (June 1966), pp. 47-68.

_____. "Survey 1968: Apartments," Canadian Builder, vol. 18 (July 1968), pp. 53-71.

Frieden, B. J. "Some Local Preferences in the Urban Housing Market," Journal of the American Institute of Planners, vol. 27 (November 1961), pp. 316-324.

_____. The Future of Old Neighbourhoods. Cambridge, Massachusetts, M. I. T. Press, 1964, 206 pp.

Gibbs, J. Urban Research Methods. New York, Van Nostrand, 1961, 625 pp.

Gillies, J. "Housing Research in Canada," Land Economics, vol. 28 (August 1952), pp. 272-277.

Gottman, J. "Why the Skyscraper?," Geographical Review, vol. 56 (April 1966), pp. 190-212.

Haig, R. M. "Toward an Understanding of the Metropolis," Quarterly Journal of Economics, vol. 40 (May 1926), pp. 179-208.

Hansen, W. G. "How Accessibility Shapes Land Use," Journal of the American Institute of Planners, vol. 25 (May 1959), pp. 72-76.

Harris, C. D. and E. L. Ullman. "The Nature of Cities," Readings in Urban Geography, eds. H. M. Mayer and C. F. Kohn, Chicago, University of Chicago Press, 1959, pp. 277-286.

Harris, R. C. "Historical Geography in Canada," The Canadian Geographer, vol. 11 (Winter 1967), pp. 239-240.

Hartshorne, R. Perspective on the Nature of Geography. Chicago, Rand McNally, 1959, 201 pp.

- Harvey, D. "Models of the Evolution of Spatial Patterns in Human Geography," Models in Geography, eds. R. J. Chorley and P. Haggett, London, Methuen, 1967, pp. 549-608.
- Hauser, P. M. and L. F. Schnore, eds. The Study of Urbanization. New York, John Wiley and Sons, 1965, 549 pp.
- Hibben, J. B. "Renewal's Riddle: The Three Storey Walk-Up," Appraisal Journal, vol. 33 (July 1965), pp. 357-362.
- Hoffman, M. "The Outlook for Downtown Housing," Journal of the American Institute of Planners, vol. 27 (February 1961), pp. 43-55.
- Hoover, E. M. "The Evolving Form and Organization of the Metropolis," Issues in Urban Economics, eds. H. S. Perloff and L. Wingo, Jr., Baltimore, The John Hopkins Press, 1968, pp. 237-284.
- _____ and R. Vernon. Anatomy of a Metropolis. New York, Doubleday, 1959, 338 pp.
- Hoyt, H. The Structure and Growth of Residential Neighbourhoods in American Cities. Washington, United States Government Printing Office, 1939, 149 pp.
- _____. "Expressways and Apartment Sites," Traffic Quarterly, vol. 12 (April 1958), pp. 263-268.
- _____. "The Pattern of Movement of Residential Rental Neighbourhoods," Readings in Urban Geography, eds. H. M. Mayer and C. F. Kohn, Chicago, University of Chicago Press, 1959, pp. 499-510.
- _____. "Recent Distortions of the Classical Models of Urban Structure," Land Economics, vol. 40 (May 1964), pp. 199-212.
- James, P. E. and C. F. Jones, eds. American Geography: Inventory and Prospect. Washington, Association of American Geographers, 1954, 590 pp.
- Jensen, R. High Density Living. London, Leonard Hill, 1966, 245 pp.
- Johnson, J. H. Urban Geography. London, Pergamon, 1967, 188 pp.
- Kao, R. C. "The Use of Computers in the Processing and Analysis of Geographic Information," Geographical Review, vol. 53 (October 1963), pp. 530-547.

- Keller, S. The Urban Neighbourhood: A Sociological Perspective. New York, Princeton University Press, 1968, 201 pp.
- Kellough, W. R. "The Housing Market Outlook," Community Planning Review, vol. 16 (Summer 1966), pp. 24-26.
- Kiang, Y. C. Urban Geography. Chicago, Illinois Teachers College, 1964, 329 pp.
- Kupfer, G. Edmonton Study: Community Opportunity Assessment. Edmonton, Government of Alberta, Department of Human Resources, 1967, 322 pp.
- Lasner, E., Building Contractor. Personal Communication. March, 1969.
- Lee, R. H. The City. New York, Lippincott, 1955, 568 pp.
- Loewenstein, L. K. "The Location of Urban Land Uses," Land Economics, vol. 39 (November 1963), pp. 407-420.
- Lowry, I. S. "Filtering and Housing Standards," Land Economics, vol. 36 (November 1960), pp. 362-370.
- Lubove, R. "The Urbanization Process: An Approach to Historical Research," Journal of the American Institute of Planners, vol. 33 (January 1967), pp. 33-39.
- MacGregor, J. G. Edmonton: A History. Edmonton, M. G. Hurtig, 1967, 328 pp.
- McAfee, R. A. Residence on the Margin of the Central Business District: A Case Study of Apartment Development in the West End of Vancouver, B. C. Unpublished M. A. thesis, University of British Columbia, Vancouver, 1967, 133 pp.
- McConnell, R. S. "Planning in Edmonton, Alberta," Journal of the Town Planning Institute, vol. 44 (June 1958), pp. 39-43.
- Mann, L. D. "Sources and Processes of Urban Environmental Change," Research Previews, Institute for Research in Social Science, University of North Carolina, May, 1963, pp. 1-12.
- Manheim, U. "Residential Growth Patterns in Metropolitan Areas," Appraisal Journal, vol. 25 (July 1957), pp. 431-440.

- Marris, P. "The Social Implications of Urban Redevelopment," Journal of the American Institute of Planners, vol. 28 (August 1962), pp. 180-186.
- Masterton, J., Research Planner, City of Edmonton. Personal Communication. February, 1969.
- Mayer, A. The Urgent Future. Toronto, McGraw-Hill, 1967, 184 pp.
- Mayer, H. M. "Spatial Change Inside the American City," Problems and Trends in American Geography, ed. S. B. Cohen, New York, Basic Books, 1967, pp. 47-63.
- _____ and C. F. Kohn, eds. Readings in Urban Geography, Chicago, University of Chicago Press, 1959, 625 pp.
- Meier, R. L. "The Evolving Metropolis of New Technology," Planning and the Urban Community, ed. H. S. Perloff, Pittsburg, University of Pittsburg Press, 1961, pp. 28-42.
- Melamed, A. "High Rent Apartments in the Suburbs," Appraisal Journal, vol. 30 (April 1962), pp. 279-289.
- Moser, C. A. Survey Methods in Social Investigation. London, Heinemann, 1958, 352 pp.
- Murphy, R. E. The American City: An Urban Geography. New York, McGraw-Hill, 1966, 454 pp.
- Muth, R. F. "Urban Residential Land and Housing Markets," Issues in Urban Economics, eds. H. S. Perloff and L. Wingo, Jr., Baltimore, The John Hopkins Press, 1968, pp. 285-333.
- Myers, G. C. Processes of Change in Urban Population Structure. Unpublished Ph.D. dissertation, University of Washington, Seattle, 1963, 224 pp.
- Perloff, H. S. and L. Wingo, Jr., eds. Issues in Urban Economics. Baltimore, The John Hopkins Press, 1968, 668 pp.
- Pownall, L. L. "Low Value Housing in Two New Zealand Cities," Annals, Association of American Geographers, vol. 50 (December 1960), pp. 439-460.
- Oppenheim, A. N. Questionnaire Design and Attitude Measurement. New York, Basic Books, 1966, 298 pp.

- Preston, R. E. "The Zone in Transition: A Study of Urban Land Use Patterns," Economic Geography, vol. 42 (July 1966), pp. 236-260.
- _____. "A Detailed Comparison of Land Use in Three Transition Zones," Annals, Association of American Geographers, vol. 58 (September 1968), pp. 461-484.
- _____. "Transition Zone Structure: The Three Sector Hypothesis," The Town Planning Review, vol. 39 (October 1968), pp. 235-250.
- _____ and D. W. Griffin. "A Restatement of the Transition Zone Concept," Annals, Association of American Geographers, vol. 56 (June 1966), pp. 339-350.
- Rapkin, C. and W. G. Grigsby. Residential Renewal in the Urban Core. Philadelphia, University of Philadelphia Press, 1960, 131 pp.
- Rashleigh, E. T. "Observations on Canadian Cities, 1960-1961," Plan Canada, vol. 3 (September 1962), pp. 60-72.
- Ratcliff, R. U. Urban Land Economics. New York, McGraw-Hill, 1949, 533 pp.
- _____. "The Dynamics of Efficiency in the Locational Distribution of Urban Activities," Readings in Urban Geography, eds. H. M. Mayer and C. F. Kohn, Chicago, University of Chicago Press, 1959, pp. 299-324.
- _____. Real Estate Analysis. New York, McGraw-Hill, 1961, 342 pp.
- Reissman, L. The Urban Process. New York, The Free Press, 1964, 254 pp.
- Robinson, A. H. Elements of Cartography. New York, John Wiley and Sons, 1962, 339 pp.
- Rodwin, L. "The Theory of Residential Growth and Structure," Appraisal Journal, vol. 18 (July 1950), pp. 295-317.
- Rogers, M. H. "Neighbourhood Improvement: The Edmonton Approach to Renewal," Appraisal Institute Magazine, vol. 9 (September 1965), pp. 13-27.
- Row, A. and E. Jurkat. "The Economic Forces Shaping Land Use Patterns," Journal of the American Institute of Planners, vol. 25 (May 1959), pp. 77-81.

- Schmid, C. F. "Generalizations Concerning the Ecology of the American City," American Sociological Review, vol. 15 (April 1950), pp. 264-281.
- Segal, N. M. "The Unchanging Area in Transition," Land Economics, vol. 43 (August 1967), pp. 284-293.
- Selltiz, C. et al., eds. Research Methods in Social Relations. New York, Holt, Rinehart and Winston, 1951, 622 pp.
- Simmons, J. W. "Urban Geography in Canada," The Canadian Geographer, vol. 11 (Winter 1967), pp. 341-356.
- Smith, P. J. Change in a Youthful City: Calgary, Alberta. Edmonton, Department of Geography, University of Alberta, 1968, 22 pp. (Mimeographed.)
- Smith, W. F. "The Housing Preferences of Elderly People," Appraisal Journal, vol. 30 (October 1962), pp. 515-522.
- _____. "Forecasting Neighbourhood Change," Land Economics, vol. 39 (August 1963), pp. 292-297.
- _____. The Low Rise Speculative Apartment. Research Report No. 25, Centre for Real Estate and Urban Economics, University of California, 1964, 132 pp.
- _____. Filtering and Neighbourhood Change. Research Report No. 24, Centre for Real Estate and Urban Economics, University of California, 1964, 77 pp.
- Sterling, A. H. "Neighbourhood Factors Affecting Residential Values," Appraisal Journal, vol. 28 (January 1960), pp. 81-89.
- The Edmonton Journal. January, 1963 — April, 1969.
- Theodorson, G. A., ed. Studies in Human Ecology. New York, Harper and Row, 1961, 626 pp.
- Thomlinson, R. Urban Structure: The Social and Spatial Character of Cities. New York, Random House, 1969, 335 pp.
- Vereker, C. and J. B. Mays. Urban Redevelopment and Social Change. Liverpool, University of Liverpool Press, 1961, 284 pp.
- Walchuk, W. "Planning Edmonton's Future," Community Planning Review, vol. 18 (Spring 1968), pp. 5-9.

- Wheaton, L. C. "Public and Private Agents of Change in Urban Expansion," Explorations into Urban Structure, eds. M. M. Weber et al., Philadelphia, University of Philadelphia Press, 1964, pp. 155-190. —
- Whyte, W. H. et al., eds. The Exploding Metropolis. New York, Doubleday, 1958, 177 pp.
- Wingo, L., Jr. Cities and Space: The Future Use of Urban Land. Baltimore, The John Hopkins Press, 1963, 261 pp.
- . "Urban Renewal: A Strategy for Information and Analysis," Journal of the American Institute of Planners, vol. 32 (May 1966), pp. 143-154.
- Windsor, R. F. The Campus Fringe of the University of Alberta. Unpublished M. A. thesis, University of Alberta, Edmonton, 1964, 133 pp.

APPENDICES

APPENDIX A

LOT AND BUILDING CHARACTERISTICS

Separate computer programs were written for (1) building characteristics and (2) lot characteristics. Essentially, the programs were designed simply to tabulate and categorize the various data. In addition, though, cross-tabulations were run, holding in turn a different factor as the controlling variable (these are indicated below by an asterisk*). These cross-tabulations allowed for greater insights and use of the data.

Building Characteristics

The following variables were collected and coded for both existing and redeveloped buildings.

1. Locational information (including tax roll number, lot number(s) that building occupied, block number in which building was located and study area*).
- 2.* Building status (either existing or removed).
3. Date building was constructed.
- 4.* Date building was constructed by period (including prior to 1911, 1911-1920, 1921-1930, 1931-1940, 1941-1950, 1951-1960 and 1961-1968).
5. Class type of building (including shack, cottage, bungalow, and one-and-a-half, one-and-three-quarter and two storey dwellings).
- 6.* Use of building (including single-family, basement conversion, other conversion, duplex, triplex, quadruplex, walk-up apartment, high rise apartment, commercial-residential, commercial, industrial, institutional, vacant building, under construction (by type) and miscellaneous).
- 7.* Quality of building construction (including good, fair to good, fair, poor to fair and poor).

8. Building maintenance and improvements (including general repairs, added a suite, other form of addition, fire repairs and other repairs).
9. Number of owners from 1953 to 1968, or to date of removal.
10. Owner occupancy status (owner resident in 1953, 1958, 1961, 1963, 1966 and 1968).
11. Square footage of ground floor of building (grouped into categories of 100 square feet).
12. Number of land use changes within building from 1953 to 1968, or to date of removal.

The following variables were collected and coded for redeveloped buildings only.

- 13.* Date building was removed.
14. Date building was removed by period (including prior to 1953, 1953–1958, 1959–1963 and 1964–1968).
- 15.* Method of removing building (including demolished, moved off site and unknown).
16. Age of building when removed.
17. Owner or renter-occupied prior to removal.
18. Number of years developer owned building prior to its removal.
19. Type of building replacing previous building (including land use types listed in number 6).

Lot Characteristics

Each lot was analyzed separately for the following years—1953, 1958, 1961, 1963, 1966 and 1968. For each of these years the following variables were collected and coded.

1. Locational information (including tax roll number, lot number, block number and study area*).

- 2.* Land use of lot (including single-family, basement conversion, other conversion, duplex, triplex, quadruplex, walk-up apartment, high rise apartment, commercial-residential, commercial, industrial, institutional, vacant building, under construction (by type), vacant lot and miscellaneous).
3. Area in square feet of lot.
4. Area in square feet of ground floor of building occupying the lot.
5. Assessed value of lot.
6. Assessed value of the building occupying the lot.

In addition, the following variables were collected and coded.

7. Land use shifts (succession) for the periods 1953-1958, 1958-1963 and 1963-1968 by each lot (including no change, conversion by type, redevelopment by type, reconversion by type and others).
8. Date that lot was initially occupied.
9. Date that lot was initially occupied by period (including prior to 1911, 1911-1920, 1921-1930, 1931-1940, 1941-1950, 1951-1960, 1961-1968 and still vacant).
10. Number of structural changes on lot from 1953 to 1968.
11. Number of land use changes on lot from 1953 to 1968.

APPENDIX B
QUESTIONNAIRE SURVEY

1. Locational information (including name of respondent, address, tax roll number and study area).
2. Please indicate the type of dwelling in which you live:
 - 1) Single-family house
 - 2) Converted dwelling with basement suite
 - 3) Converted dwelling with other suites
 - 4) Duplex, triplex or quadruplex
 - 5) Apartment
 - 6) Other
3. Do you own or rent the dwelling in which you live?
4. How long have you lived in this residence?
5. Have you lived in this dwelling since it was built?
6. How long have you lived in Edmonton?
7. Please indicate the year you moved into your last three residences in Edmonton; the type of dwelling each was; and the closest street and avenue intersection to which each was located.
8. If you have moved within the last ten years, which of the below phrases best describes the type of residential area in which you last lived—as compared to the neighbourhood in which you now live?
 - 1) An area of single-family houses over ten years old
 - 2) An area mixed with single-family houses over ten years old and newer apartments less than ten years old
 - 3) An area of single-family houses less than ten years old
 - 4) Other (please describe)
9. Here are some reasons that people often mention for choosing to live in a particular residential area within Edmonton. Please indicate how important each was to you for choosing your present residence by marking the degree of importance for each reason (not important, fairly important and very important).
 - 1) Pleasant neighbourhood environment

- 2) Close to downtown Edmonton
- 3) Only home available at the time looking for a residence
- 4) Close to neighbourhood shops
- 5) Within financial means
- 6) Close to place of work
- 7) Near to large shopping district
- 8) Bus route nearby
- 9) Close to major street thoroughfare
- 10) Other (please describe)

10. Do any of the following expression describe the character of the neighbourhood in which you live?

- 1) Many houses are being renovated, altered, etc. to house more than one family
- 2) Rented dwellings frequently change tenants
- 3) An active area of apartment building
- 4) Little building activity going on
- 5) Houses frequently change owners

11. What is the occupation of the main wage earner of the household?

If you do not work or are retired please mark here, and if a student here.

- | | |
|-------------------------------------|----------------------------------|
| 1) Managerial | 6) Sales |
| 2) Professional | 7) Farmer |
| 3) Clerical | 8) Craftsman, production process |
| 4) Service and recreation | 9) Labourer |
| 5) Transportation and communication | 10) Other (please describe) |

12. What is the address of this person's present place of work (to the nearest street and avenue)?

13. By what means of transportation does this person get to work?

- 1) Walk
- 2) Bus
- 3) Taxi
- 4) Own car
- 5) Share ride

14. How far does this person live from his or her job?

- 1) Within walking distance
- 2) Within 15 minutes by bus or car
- 3) Within 30 minutes by bus or car
- 4) More than 30 minutes by bus or car

15. How many miles does this person live from his or her job?

16. If you are thinking of moving in the near future, are any of the following factors influences in your decision to do so? Please indicate how important each reason is to you by marking the degree of importance for each question (very important, fairly important and not important). Please mark here if you are not thinking of moving.
- 1) Too much noise from passing traffic
 - 2) Too old (age) to manage a house any longer
 - 3) House is in need of repairs
 - 4) Nearby apartment construction threatens privacy
 - 5) House is too small for family size
 - 6) House is too big for family size
 - 7) Desire to change dwelling type
 - 8) Desire to live closer to work
 - 9) Financial means has increased
 - 10) Too much traffic on nearby streets
 - 11) Other (please describe)
17. In your next move, what type of residential area would you consider moving into? Please mark here if you are not thinking of moving.
- 1) An area of single-family houses over ten years old
 - 2) An area mixed with single-family houses over ten years old
 - 3) An area of single-family houses less than ten years old
 - 4) Other (please describe)

The remaining questions apply to homeowners only. If you are not a homeowner, however, could you please turn to question 22, where any additional comments will be welcomed.

18. Have you been approached by somebody desiring to buy your house without first listing it for sale?
19. What was your decision to question 18?
- 1) Agreed to sell
 - 2) Definitely refused
 - 3) Considering selling
20. If you have been approached to sell your house without yourself first placing it on the market, what type of person offered to buy your house from you? Please mark here if this question does not apply to you.
- 1) Licesed real estate agent
 - 2) Apartment developer
 - 3) Do not know
 - 4) Other (please describe)

21. If you refused to sell your house, did any of the following reasons influence your decision not to sell? Please mark here if the question does not apply to you.
- 1) Intended buyer did not offer enough money
 - 2) Have lived here a long time and have no intention of moving
 - 3) Enjoy advantages of living in this neighbourhood
 - 4) Other (please describe)
22. Please feel free to add any additional comments below.

APPENDIX C
TABLE 1 — CHANGES IN THE RESIDENTIAL LAND USE STRUCTURE, AREA 1, 1953-1968¹

Land Use Types	1953			1958			1963			1968		
	Area ²	%	No. ³	Area	%	No.	Area	%	No.	Area	%	No.
Single-family	737	81.9	106	774	86.1	111	721	80.2	103	646	71.8	93
Basement conversions	134	14.9	18	111	12.3	15	137	17.4	22	149	16.6	21
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-
Du, tri, quadruplexes	7	.8	1	7	.8	1	15	1.6	2	23	2.5	3
Walk-up apartments	-	-	-	-	-	-	-	-	-	68	7.5	4
High rise apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	7	.8	1	7	.8	1	7	.8	1	7	.8	1
Vacant land	15	1.6	2	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	-	-	-	-	8	.8	1
Totals	900	100	128	900	100	128	900	100	128	900	100	123

¹Excludes non-residential land use.

²Area is in 000's of square feet.

³Props stands for properties.

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX C
TABLE 2 — CHANGES IN THE RESIDENTIAL LAND USE STRUCTURE, AREA 2, 1953-1968¹

Land Use Types	1953			1958			1963			1968		
	Area ²	%	No. 3	Area	%	No.	Area	%	No.	Area	%	No.
Single-family	758	100.0	101	750	99.1	100	727	96.3	97	518	68.5	69
Basement conversions	-	-	-	8	.9	1	15	1.9	2	7	.9	1
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-
Du, tri, quadruplexes	-	-	-	-	-	-	8	.9	1	23	2.9	3
Walk-up apartments	-	-	-	-	-	-	-	-	-	98	12.9	6
High rise apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	-	-	-	-	-	-
Vacant land	-	-	-	-	-	-	8	.9	1	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	23	2.9	3
Under construction	-	-	-	-	-	-	-	-	-	90	11.9	6
Totals	758	100	101	758	100	101	758	100	101	758	100	88

¹Excludes non-residential land use.

²Area is in 000's of square feet.

³Props stands for properties

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX C
TABLE 3 — CHANGES IN THE RESIDENTIAL LAND USE STRUCTURE, AREA 3, 1953-1968¹

Land Use Types	1953			1958			1963			1968		
	Area ²	%	No. ³	Area	%	No.	Area	%	No.	Area	%	No.
Single-family	463	77.8	74	352	60.7	55	267	45.6	42	161	29.1	26
Basement conversions	56	9.5	8	105	18.1	14	79	13.5	11	45	8.1	6
Other conversions	78	12.7	12	101	17.3	15	104	17.8	16	71	12.8	11
Du, tri, quadruplexes	-	-	-	8	1.3	1	38	6.4	5	38	6.8	5
Walk-up apartments	-	-	-	15	2.6	2	90	15.4	9	225	40.6	19
High rise apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	8	1.3	1	8	1.3	1
Vacant land	-	-	-	-	-	-	-	-	-	8	1.3	1
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	-	-	-	-	-	-	-
Totals	595	100	94	580	100	87	585	100	83	555	100	69

¹Excludes non-residential land use.

²Area is in 000's of square feet.

³Props stands for properties.

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX C
TABLE 4 — CHANGES IN THE RESIDENTIAL LAND USE STRUCTURE, AREA 4, 1953-1968

Land Use Types	1953			1958			1963			1968		
	Area ²	%	No.	Area	%	No.	Area	%	No.	Area	%	No.
			Props ³			Props			Props			Props
Single-family	368	61.8	65	334	60.6	61	278	51.2	55	173	29.1	32
Basement conversions	50	8.5	5	26	4.8	4	26	4.8	4	26	4.4	4
Other conversions	150	25.2	21	153	27.9	24	170	31.2	25	113	19.2	16
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Walk-up apartments	7	1.1	1	22	4.0	3	52	9.5	7	52	8.8	7
High rise apartments	-	-	-	-	-	-	11	1.9	1	138	23.2	5
Commercial-residential	8	1.3	1	8	1.3	1	8	1.4	1	8	1.3	1
Vacant land	13	2.1	1	8	1.4	1	-	-	-	5	.8	1
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	-	-	-	-	78	13.2	1
Totals	595	100	94	550	100	94	544	100	93	592	100	67

¹Excludes non-residential land use.

²Area is in 000's of square feet.

³Props stands for properties.

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX C
TABLE 5 — CHANGES IN THE RESIDENTIAL LAND USE STRUCTURE, AREA 5, 1953-1968¹

Land Use Types	1953			1958			1963			1968		
	Area ²	%	No. ³	Area	%	No.	Area	%	No.	Area	%	No.
Single-family	262	61.1	56	156	36.6	34	156	36.6	34	109	25.7	23
Basement conversions	70	16.2	14	168	39.2	35	174	40.7	36	100	23.8	22
Other conversions	17	4.1	3	24	5.5	4	13	3.1	3	41	9.8	8
Du, tri, quadruplexes	9	2.0	1	17	4.1	3	17	4.1	2	22	5.1	4
Walk-up apartments	-	-	-	-	-	-	9	2.0	1	68	16.0	6
High rise apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	35	8.2	7	39	9.2	8	39	9.2	8	39	9.3	8
Vacant land	36	8.4	8	23	5.4	5	18	4.4	3	4	1.0	1
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	-	-	-	-	40	9.3	3
Totals	429	100	89	428	100	89	428	100	87	423	100	75

¹Excludes non-residential land use.

²Area is in 000's of square feet.

³Props stands for properties.

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX C
TABLE 6 — CHANGES IN THE RESIDENTIAL LAND USE STRUCTURE, AREA 6, 1953-1968¹

Land Use Types	1953			1958			1963			1968		
	Area ²	%	No. ³	Area	%	No.	Area	%	No.	Area	%	No.
Single-family	368	68.4	84	315	61.4	71	285	55.0	62	215	42.2	49
Basement conversions	57	10.7	13	106	20.8	24	119	23.0	27	106	20.8	24
Other conversions	21	3.9	4	30	5.8	6	34	6.6	7	34	6.7	7
Du, tri, quadruplexes	-	-	-	9	1.7	2	17	3.4	4	17	3.4	4
Walk-up apartments	28	5.2	3	14	2.8	2	14	2.8	2	115	22.5	12
High rise apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	9	1.6	2	9	1.6	2	9	1.6	2	9	1.7	2
Vacant land	55	10.2	12	26	5.1	12	22	4.2	8	13	2.7	3
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Under construction	-	-	-	4	.8	1	17	3.4	2	-	-	-
Totals	538	100	118	513	100	120	518	100	114	509	100	101

¹Excludes non-residential land use.

²Area is in 000's of square feet.

³Props stands for properties.

Source: Assessors Department, City of Edmonton, 1968.[†]

APPENDIX C
TABLE 7 — CHANGES IN THE RESIDENTIAL LAND USE STRUCTURE, AREA 7, 1953-1968¹

Land Use Types	1953			1958			1963			1968		
	Area ²	%	No. ³	Area	%	No.	Area	%	No.	Area	%	No.
	Area		Props	Area		Props	Area		Props	Area		Props
Single-family	630	76.0	99	452	67.1	73	416	61.8	68	264	41.2	47
Basement conversions	126	15.2	18	205	30.3	30	211	31.2	30	105	16.4	18
Other conversions	-	-	-	-	-	-	8	1.1	1	-	-	-
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Walk-up apartments	-	-	-	8	1.1	1	30	1.4	3	248	38.6	15
High rise apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	10	1.2	2	10	1.5	2	10	1.5	2	10	1.5	2
Vacant land	64	7.6	9	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	-	-	-	-	15	2.3	1
Totals	830	100	128	674	100	106	674	100	104	641	100	83

¹Excludes non-residential land use.

²Area is in 000's of square feet.

³Props stands for properties.

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX D
TABLE 1 — RATES OF CHANGE OF RESIDENTIAL LAND USE TYPES, AREA 1, 1953-1968

Land Use Type	1953 Area ¹	1958 Area	% Change	1963 Area	% Change	1968 Area	% Change	Total Change
Single-family	737	774	+ 5.1	721	- 6.8	646	- 10.4	- 12.3
Basement conversions	134	111	- 16.9	157	+ 40.9	149	- 4.8	+ 11.6
Other conversions	-	-	-	-	-	-	-	-
Du, tri, quadruplexes	7	7	-	15	+100.0	23	+ 50.0	+ 200.0
Walk-up apartments	-	-	-	-	-	68	-	-
High rise apartments	-	-	-	-	-	-	-	-
Commercial-residential	7	7	-	7	-	7	-	-
Vacant land	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	-	-	-

¹Area is in 000's of square feet.
Source: Assessors Department, City of Edmonton, 1968.

APPENDIX D
TABLE 2 — RATES OF CHANGE OF RESIDENTIAL LAND USE TYPES, AREA 2, 1953-1968

Land Use Type	1953 Area ¹	1958 Area	% Change	1963 Area	% Change	1968 Area	% Change	Total Change
Single-family	758	750	- 1.0	727	- 3.0	518	- 28.9	- 30.3
Basement conversions	-	8	-	15	+100.0	8	- 50.0	-
Other conversions	-	-	-	-	-	-	-	-
Du, tri, quadruplexes	-	-	-	8	-	23	+ 200.0	+ 200.0
Walk-up apartments	-	-	-	-	-	98	-	-
High rise apartments	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	-	-
Vacant land	-	-	-	8	-	-	-	-
Vacant buildings	-	-	-	-	-	23	-	-
Under construction	-	-	-	-	-	-	-	-

¹Area is in 000's of square feet.
Source: Assessors Department, City of Edmonton, 1968.

APPENDIX D
TABLE 3 — RATES OF CHANGE OF RESIDENTIAL LAND USE TYPES, AREA 3, 1953-1968

Land Use Type	1953 Area ¹	1958 Area	% Change	1963 Area	% Change	1968 Area	% Change	Total Change
Single-family	463	352	- 24.0	267	- 24.2	161	- 39.6	- 65.2
Basement conversions	56	105	+ 86.7	79	- 25.0	45	- 42.9	- 20.0
Other conversions	78	101	+ 32.7	104	+ 3.7	71	- 31.7	- 5.9
Du, tri, quadruplexes	-	8	-	38	+400.0	38	-	+ 400.0
Walk-up apartments	-	15	-	90	+500.0	225	+ 150.0	+1400.0
High rise apartments	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	8	-	8	-	-
Vacant land	-	-	-	-	-	8	-	-
Vacant buildings	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	-	-	-

¹Area is in 000's of square feet.
Source: Assessors Department, City of Edmonton, 1968.

APPENDIX D
TABLE 4 — RATES OF CHANGE OF RESIDENTIAL LAND USE TYPES, AREA 4, 1953-1968

Land Use Type	1953 Area ¹	1958 Area	% Change	1963 Area	% Change	1968 Area	% Change	Total Change
Single-family	368	334	- 9.4	278	- 26.9	173	- 38.0	- 53.1
Basement conversions	50	26	- 47.9	26	-	26	-	- 47.9
Other conversions	150	153	+ 2.5	170	+ 10.8	113	- 33.3	- 24.3
Du, tri, quadruplexes	-	-	-	-	-	-	-	-
Walk-up apartments	7	22	+222.2	52	+138.4	52	-	+ 668.3
High rise apartments	-	-	-	11	-	138	+1211.3	+1211.3
Commercial-residential	8	8	-	8	-	8	-	-
Vacant land	13	8	- 38.1	-	-	5	-	- 60.3
Vacant buildings	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	78	-	-

¹ Area is in 000's of square feet.
Source: Assessors Department, City of Edmonton, 1968.

APPENDIX D
TABLE 5 — RATES OF CHANGE OF RESIDENTIAL LAND USE TYPES, AREA 5, 1953-1968

Land Use Type	1953 Area ¹	1958 Area	% Change	1963 Area	% Change	1968 Area	% Change	Total Change
Single-family	262	156	- 40.4	156	-	109	- 30.2	- 58.4
Basement conversions	70	168	+139.6	174	+ 3.9	100	- 42.5	- 44.0
Other conversions	17	24	+ 37.1	13	- 45.3	41	+ 216.1	+ 137.0
Du, tri, quadruplexes	9	17	+100.0	17	-	22	+ 25.0	+ 150.0
Walk-up apartments	-	-	-	9	-	68	+ 662.4	+ 662.4
High rise apartments	-	-	-	-	-	-	-	-
Commercial-residential	35	39	+ 12.4	39	-	39	-	+ 12.4
Vacant land	36	23	- 36.1	18	- 18.8	4	- 81.2	- 88.0
Vacant buildings	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	40	-	-

¹Area is in 000's of square feet.

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX D
TABLE 6 — RATES OF CHANGE OF RESIDENTIAL LAND USE TYPES, AREA 6, 1953-1968

Land Use Types	1953 Area ¹	1958 Area	% Change	1963 Area	% Change	1968 Area	% Change	Total Change
Single-family	368	315	- 14.9	285	- 9.6	215	- 22.7	- 41.5
Basement conversions	57	106	+ 72.6	119	+ 12.3	106	- 11.0	+ 84.5
Other conversions	21	30	+ 41.0	34	+ 14.5	34	-	+ 61.5
Du, tri, quadruplexes	-	9	-	17	+100.0	17	-	+ 100.0
Walk-up apartments	28	14	- 59.6	14	-	115	+ 692.7	+ 316.5
High rise apartments	-	-	-	-	-	-	-	-
Commercial-residential	9	9	-	9	-	9	-	-
Vacant land	55	26	- 52.5	22	- 16.7	13	- 40.0	- 76.3
Vacant buildings	-	-	-	-	-	-	-	-
Under construction	-	4	-	17	+325.0	-	-	-

¹Area is in 000's of square feet.

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX D
TABLE 7 — RATES OF CHANGE OF RESIDENTIAL LAND USE TYPES, AREA 7, 1953-1968

Land Use Types	1953 Area ¹	1958 Area	% Change	1963 Area	% Change	1968 Area	% Change	Total Change
Single-family	630	452	- 28.2	416	- 8.0	264	- 36.5	- 58.1
Basement conversions	126	205	+ 62.3	211	+ 2.9	105	- 50.1	- 16.6
Other conversions	-	-	-	8	-	-	-	-
Du, tri, quadruplexes	-	-	-	-	-	-	-	-
Walk-up apartments	-	8	-	30	+300.0	248	+ 725.0	+3200.0
High rise apartments	-	-	-	-	-	-	-	-
Commercial-residential	10	10	-	10	-	10	-	-
Vacant land	64	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-
Under construction	-	-	-	-	-	15	-	-

¹Area is in 000's of square feet.
Source: Assessors Department, City of Edmonton, 1968.

APPENDIX E
TABLE 1 — LAND USE SUCCESSION MATRIX, AREA 1, 1953-1968

	1958 Land Use										Total	No	Total
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Changes	Change	Props	
1953 Land Use													
Single-family	-	2	-	-	-	-	-	-	-	2	104	106	
Basement conversions	5	-	-	-	-	-	-	-	-	5	13	18	
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-	
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	1	1	
Apartments	-	-	-	-	-	-	-	-	-	-	-	-	
Commercial-residential	-	-	-	-	-	-	-	-	-	-	1	1	
Vacant land	2	-	-	-	-	-	-	-	-	2	-	2	
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-	
Non-residential	-	-	-	-	-	-	-	-	-	-	-	-	
Total	7	2	-	-	-	-	-	-	-	9	119	128	
1963 Land Use													
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total	
										Changes	Change	Props	
1958 Land Use													
Single-family	-	11	-	1	-	-	-	-	-	12	99	111	
Basement conversions	4	-	-	-	-	-	-	-	-	4	11	15	
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-	
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	1	1	
Apartments	-	-	-	-	-	-	-	-	-	-	-	-	
Commercial-residential	-	-	-	-	-	-	-	-	-	-	1	1	
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-	
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-	
Non-residential	-	-	-	-	-	-	-	-	-	-	-	-	
Total	4	11	-	1	-	-	-	-	-	16	112	128	
1968 Land Use													
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total	
										Changes	Change	Props	
1963 Land Use													
Single-family	-	1	-	2	7	-	-	-	-	10	93	103	
Basement conversions	-	-	-	-	2	-	-	-	-	2	20	22	
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-	
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	2	2	
Apartments	-	-	-	-	-	-	-	-	-	-	-	-	
Commercial-residential	-	-	-	-	-	-	-	-	-	-	1	1	
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-	
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-	
Non-residential	-	-	-	-	-	-	-	-	-	-	-	-	
Total	-	1	-	2	9	-	-	-	-	12	116	128	

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX E
TABLE 2 — LAND USE SUCCESSION MATRIX, AREA 2, 1953-1968

	1958 Land Use									Total	No	Total
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Changes	Change	Props
1953 Land Use												
Single-family	-	1	-	-	-	-	-	-	-	1	100	101
Basement conversions	-	-	-	-	-	-	-	-	-	-	-	-
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	-	-	-	-	-	-
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	1	-	-	-	-	-	-	-	1	100	101
1963 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Changes	Change	Props
1958 Land Use												
Single-family	-	2	-	-	-	-	-	1	-	3	97	100
Basement conversions	-	-	-	-	-	-	-	-	-	-	1	1
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	-	-	-	-	-	-
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	2	-	-	-	-	-	1	-	3	98	101
1968 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Changes	Change	Props
1963 Land Use												
Single-family	-	1	-	3	23	-	-	3	-	30	67	97
Basement conversions	-	-	-	-	1	-	-	-	-	1	1	2
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	1	1
Apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	-	-	-	-	-	-
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	1	-	-	-	-	1	-	1
Non-residential	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	1	-	3	25	-	-	3	-	32	69	101

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX E
TABLE 3 — LAND USE SUCCESSION MATRIX, AREA 3, 1953-1968

	1958 Land Use									Total Changes	No Change	Total Props
	SF	BC	OC	DTQ	A	CR	VL	VB	NR			
1953 Land Use												
Single-family	-	7	4	2	2	-	-	-	5	20	54	74
Basement conversions	1	-	-	-	-	-	-	-	-	1	7	8
Other conversions	-	-	-	-	-	-	-	-	-	-	12	12
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	-	-	-	-	-	-
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	1	1
Total	1	7	4	2	2	-	-	-	5	21	74	95
1963 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total Changes	No Change	Total Props
1958 Land Use												
Single-family	-	3	1	1	7	-	-	-	1	13	42	55
Basement conversions	1	-	-	2	3	-	-	-	-	6	8	14
Other conversions	-	-	-	-	-	-	-	-	-	-	15	15
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	1	1
Apartments	-	-	-	-	-	-	-	-	-	-	2	2
Commercial-residential	-	-	-	-	-	-	-	-	-	-	-	-
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	1	-	-	-	1	1	2
Total	1	3	1	3	10	1	-	-	1	20	69	89
1968 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total Changes	No Change	Total Props
1963 Land Use												
Single-family	-	-	-	-	14	-	1	-	3	18	24	42
Basement conversions	1	-	-	-	3	-	-	-	1	5	6	11
Other conversions	-	-	-	-	3	-	-	-	1	4	12	16
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	5	5
Apartments	-	-	-	-	-	-	-	-	-	-	9	9
Commercial-residential	-	-	-	-	-	-	-	-	-	-	1	1
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	1	1
Total	1	-	-	-	20	-	1	-	5	27	58	85

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX E
TABLE 4 — LAND USE SUCCESSION MATRIX, AREA 4, 1953-1968

	1958 Land Use									Total	No	Total
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Changes	Change	Props
1953 Land Use												
Single-family	-	1	6	-	1	-	1	-	4	13	52	65
Basement conversions	1	-	-	-	-	-	-	-	1	2	3	5
Other conversions	2	-	-	-	1	-	-	-	-	3	18	21
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	-	-	1	1
Commercial-residential	-	-	-	-	-	-	-	-	-	-	1	1
Vacant land	-	-	-	-	-	-	-	-	1	1	-	1
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	11	11
Total	3	1	6	-	2	-	1	-	6	19	86	105
1963 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total
										Changes	Change	Props
1958 Land Use												
Single-family	-	-	3	-	4	-	-	-	-	7	54	61
Basement conversions	-	-	-	-	-	-	-	-	-	-	4	4
Other conversions	-	-	-	-	1	-	-	-	-	1	23	24
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	-	-	3	3
Commercial-residential	-	-	-	-	-	-	-	-	-	-	1	1
Vacant land	-	-	-	-	-	-	-	-	1	1	-	1
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	14	14
Total	-	-	3	-	5	-	-	-	1	9	99	108
1968 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total
										Changes	Change	Props
1963 Land Use												
Single-family	-	-	1	-	21	-	-	-	-	22	33	55
Basement conversions	-	-	-	-	-	-	-	-	-	-	4	4
Other conversions	-	-	-	-	8	-	-	1	3	12	13	25
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	-	-	8	8
Commercial-residential	-	-	-	-	-	-	-	-	-	-	1	1
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	16	16
Total	-	-	1	-	29	-	-	1	3	34	85	109

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX E
TABLE 5 — LAND USE SUCCESSION MATRIX, AREA 5, 1953-1968

	1958 Land Use									Total Changes	No Change	Total Props
	SF	BC	OC	DTQ	A	CR	VL	VB	NR			
1953 Land Use												
Single-family	-	22	1	-	-	-	-	-	1	24	32	56
Basement conversions	-	-	1	-	-	-	-	-	-	1	13	14
Other conversions	-	-	-	-	-	-	-	-	-	-	3	3
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	1	1
Apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	-	-	-	-	7	7
Vacant land	-	-	-	4	-	-	-	-	1	5	3	8
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	1	-	-	-	1	12	13
Total	-	22	2	4	-	1	-	-	2	31	71	102
1963 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total Changes	No Change	Total Props
1958 Land Use												
Single-family	-	1	-	-	1	-	-	-	-	2	32	34
Basement conversions	2	-	-	-	-	-	-	-	-	2	33	35
Other conversions	-	2	-	-	-	-	-	-	-	2	2	4
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	3	3
Apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	-	-	-	-	8	8
Vacant land	-	-	-	-	-	1	-	-	-	1	4	5
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	12	12
Total	2	3	-	-	1	1	-	-	-	7	94	101
1968 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total Changes	No Change	Total Props
1963 Land Use												
Single-family	-	1	-	-	13	-	-	-	1	15	19	34
Basement conversions	4	-	9	1	3	-	-	-	-	17	19	36
Other conversions	-	-	-	-	1	-	-	-	1	2	-	2
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	3	3
Apartments	-	-	-	-	-	-	-	-	-	-	1	1
Commercial-residential	-	-	-	-	-	-	-	-	-	-	8	8
Vacant land	-	-	-	-	3	-	-	-	-	3	-	3
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	1	-	-	-	-	1	11	12
Total	4	1	9	1	21	-	-	-	2	38	61	99

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX E
TABLE 6 — LAND USE SUCCESSION MATRIX, AREA 6, 1953-1968

	1958 Land Use									Total Changes	No Change	Total Props
	SF	BC	OC	DTQ	A	CR	VL	VB	NR			
1953 Land Use												
Single-family	-	11	2	-	-	-	-	-	-	13	71	84
Basement conversions	-	-	-	-	-	-	-	-	-	-	13	13
Other conversions	-	-	-	-	-	-	-	-	-	-	4	4
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	1	1	2	3
Commercial-residential	-	-	-	-	-	-	-	-	-	-	2	2
Vacant land	-	-	-	3	-	-	-	-	1	4	8	12
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	14	14
Total	-	11	2	3	-	-	-	-	2	18	114	132
	1963 Land Use									Total Changes	No Change	Total Props
	SF	BC	OC	DTQ	A	CR	VL	VB	NR			
1958 Land Use												
Single-family	-	4	1	1	4	-	-	-	1	11	60	71
Basement conversions	1	-	-	-	-	-	-	-	-	1	23	24
Other conversions	-	-	-	-	-	-	-	-	-	-	6	6
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	3	3
Apartments	-	-	-	-	-	-	-	-	-	-	2	2
Commercial-residential	-	-	-	-	-	-	-	-	-	-	2	2
Vacant land	-	-	-	-	-	-	-	-	-	-	12	12
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	14	14
Total	1	4	1	1	4	-	-	-	-	12	123	135
	1968 Land Use									Total Changes	No Change	Total Props
	SF	BC	OC	DTQ	A	CR	VL	VB	NR			
1963 Land Use												
Single-family	-	1	-	-	13	-	-	-	-	14	48	62
Basement conversions	1	-	-	-	1	-	-	-	1	3	24	27
Other conversions	-	-	-	-	-	-	-	-	1	1	6	7
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	4	4
Apartments	-	-	-	-	-	-	-	-	-	-	4	4
Commercial-residential	-	-	-	-	-	-	-	-	-	-	2	2
Vacant land	-	-	-	-	3	-	-	-	-	3	5	8
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	14	14
Total	1	1	-	-	17	-	-	-	2	21	107	128

Source: Assessors Department, City of Edmonton, 1968.

APPENDIX E
TABLE 7 — LAND USE SUCCESSION MATRIX, AREA 7, 1953-1968

	1958 Land Use									Total	No	Total
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Changes	Change	Props
1953 Land Use												
Single-family	-	16	-	-	1	-	-	-	15	32	67	99
Basement conversions	3	-	-	-	-	-	-	-	1	4	14	18
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	-	-	-	-
Commercial-residential	-	-	-	-	-	-	-	-	-	-	2	2
Vacant land	-	-	-	-	-	-	-	-	9	9	-	9
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	5	5
Total	3	16	-	-	1	-	-	-	25	45	88	133
1963 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total
										Changes	Change	Props
1958 Land Use												
Single-family	-	5	1	-	3	-	-	-	-	9	64	73
Basement conversions	4	-	-	-	-	-	-	-	-	4	26	30
Other conversions	-	-	-	-	-	-	-	-	-	-	-	-
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	-	-	1	1
Commercial-residential	-	-	-	-	-	-	-	-	-	-	2	2
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	6	6
Total	4	5	1	-	3	-	-	-	-	13	99	112
1968 Land Use												
	SF	BC	OC	DTQ	A	CR	VL	VB	NR	Total	No	Total
										Changes	Change	Props
1963 Land Use												
Single-family	-	2	-	-	20	-	-	-	3	25	43	68
Basement conversions	3	-	-	-	11	-	-	-	-	14	16	30
Other conversions	-	-	-	-	1	-	-	-	-	1	-	1
Du, tri, quadruplexes	-	-	-	-	-	-	-	-	-	-	-	-
Apartments	-	-	-	-	-	-	-	-	-	-	3	3
Commercial-residential	-	-	-	-	-	-	-	-	-	-	2	2
Vacant land	-	-	-	-	-	-	-	-	-	-	-	-
Vacant buildings	-	-	-	-	-	-	-	-	-	-	-	-
Non-residential	-	-	-	-	-	-	-	-	-	-	6	6
Total	3	2	-	-	32	-	-	-	3	40	70	110

Source: Assessors Department, City of Edmonton, 1968.

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